

The WORLD

The North Pole

agreeable to the latest

DISCOVERIES

The North Pole

South Pole

South Pole

I. Gibson Sculp

V I E W of the E A R T H:

Being a short but comprehensive

S Y S T E M

O F

M O D E R N G E O G R A P H Y.

E X H I B I T I N G,

- | | |
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| <p>I. A Description of the <i>Figure, Size, Motion, &c.</i> of the <i>Earth</i>; with the <i>Uses and Height</i> of the <i>Atmosphere</i>, or <i>Air</i> surrounding it.</p> <p>II. Such <i>Geographical Definitions, Schemes, and Descriptions</i>, as form a necessary <i>Introduction</i> to this Branch of Learning.</p> <p>III. The <i>Situation and Extent</i> of the several <i>Kingdoms, and Nations</i> in each Quarter; their <i>chief City</i>; with the <i>Distance, Direction, and Difference of Time</i> from <i>London</i>.</p> <p>IV. An Account of the several <i>Islands, Trade, Commodities, Religions, Number of Inhabitants, principal Mountains, and Rivers</i> in the <i>World</i>; also some <i>Observations</i> on the <i>less</i></p> | <p><i>known Parts, the Trade Winds, and Monsoons.</i></p> <p>V. The <i>Explanation and Use</i> of a new <i>Set of Maps</i>, annexed to the several Quarters, drawn according to the most approved <i>modern Projections</i>, and regulated by <i>Observations</i>.</p> <p>VI. A <i>Description</i> of <i>Commodore Anson's Voyage</i> round the <i>World</i>; shewing the several <i>Islands and Countries</i> he touched at; and the <i>Places</i> where he took any <i>Prize</i>, particularly the rich <i>Manilla Ship</i>.</p> <p>VII. A new and curious <i>Geographical Clock</i>, which points out the <i>Difference of Time</i>, with the <i>Hour</i>, in the <i>different Nations</i> upon <i>Earth</i>, at one <i>View</i>.</p> |
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W I T H

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G E O G R A P H Y and A S T R O N O M Y. Dr. W A T T S.

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To your Services,

By

The **AUTHOR.**

* Mr. *Salmon* has told us in his *Geographical Grammar*, that *young Gentlemen*, without a general Knowledge of the State of the World—the Manners, Customs and History of the several Nations his Cotemporaries, are neither *capable* of serving their *Country*, nor *qualified* for *Conversation*.—And Mr. *Echard* says—that no *ingenious Person* can be *excused* for his *Ignorance* in this *Science*.

††† The *Earth* is given us for an Habitation: 'Tis the Place of present Residence for all our *Fellow-Mortals*: Nor is it possible there should be any *Commerce* maintained with those, who dwell at a Distance, without some Acquaintance with the different Tracts of *Land*, and the *Rivers*, or *Seas*, that divide the *Regions* of the *Earth*.

A S H O R T

S Y S T E M

O F

M O D E R N G E O G R A P H Y.

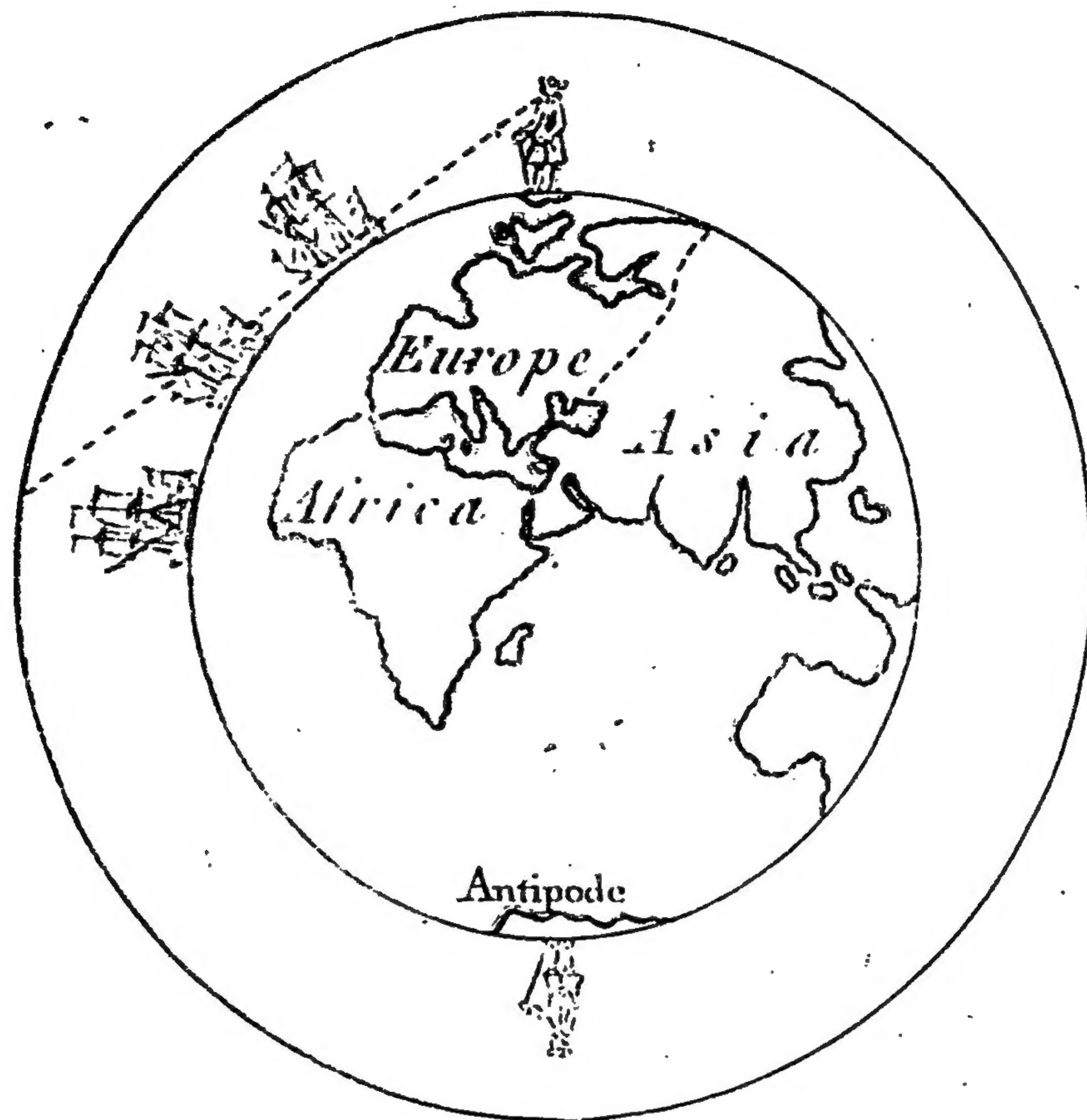
GEOGRAPHY is a Description of the Earth, as it stands divided into *Land* and *Water*, for both these together constitute our Globe: —And, is a *Science* not only curious and entertaining, but of the greatest Use. It opens and enlarges the *Ideas*; gives you true Notions of the various Situations of Kingdoms, Nations, and People; and is of such Consequence in History, that nothing can be understood (with Justness and Propriety) without it. Hence we find the great Mr. *Locke* recommending it in the warmest Manner. He is of Opinion, that *Youth* ought to *begin* with this Science, as an Introduction to their future Studies.

Many Volumes are already extant on this *Kind of Learning*, but their *Size* rather *deters* young *Minds*, than invites them to a perusal: The following *Compendium*, for this Reason, I flatter myself, will not be *unacceptable*, as it exhibits (in one short View) every Thing necessary to enable *Youth* to proceed to the larger Systems of *Geography* or *History*, with Ease and Pleasure.

THE EARTH, then, on which we live, is one of the *Planets*; and, however it may appear, from the little we can take in at one View, is a *large round Ball*, about 8000 Miles in *Diameter*, and 25000 in *Circumference*. It turns once round upon its *Axis* from *West* to *East*, (which makes the *Sun* and all the *Heavenly Bodies* appear to move the contrary way, from *East* to *West*) in 24 Hours; which is the Cause of *Day* and *Night*. At the same Time, it advances in a *Circular Orbit* round the *Sun* (which remains fixed in the Center at the Distance of 81 Millions of Miles) in the Space of 365 Days, 6 Hours*. This produces the various *Seasons* of the Year,—WINTER, SUMMER, AUTUMN, and SPRING.

* Note; These 6 Hours in 4 Years make one Day, which is added to February; then that Month hath 29 Days, and the Year is called Leap-Year; because all the succeeding Days advance or Leap forward one Day more than they would do, if no such Day was added.

That the LAND and WATER, taken together, make one *round* Body, is evident from the many Observations of Persons standing on the Shore and viewing a Ship departing from the Port. They gradually lose Sight first of the *Bottom* of the Vessel, whilst they can still see the *Rigging* and *Flags* at the Top: But as the Ship proceeds on, they lose Sight of these also; as if the Whole was sunk into the Deep. Likewise in a Ship making to Land; the Mariners *first* descry the Tops of *Steeple*s, *Trees*, &c. pointing above the Water; *next*, they see the *Buildings*; and *last* of all, the *Shore*; which can only be the Effect of the Earth's *Rotundity*, or *Roundness*, as here delineated.



The *Roundness* of the *Earth* is also confirmed by the many *Voyages*, which have been made about it, from *East to West*; first—by *Magellan's* Ship in the Years 1519, 1520 and 1521, in 1124 Days;—by *Sir Francis Drake* in the Years 1577, 1578, 1579 and 1580, in 1056 Days; and lastly—by the late Lord *Anson*, who on the 15th of June 1744, finished his long Voyage of near 4 Years †.

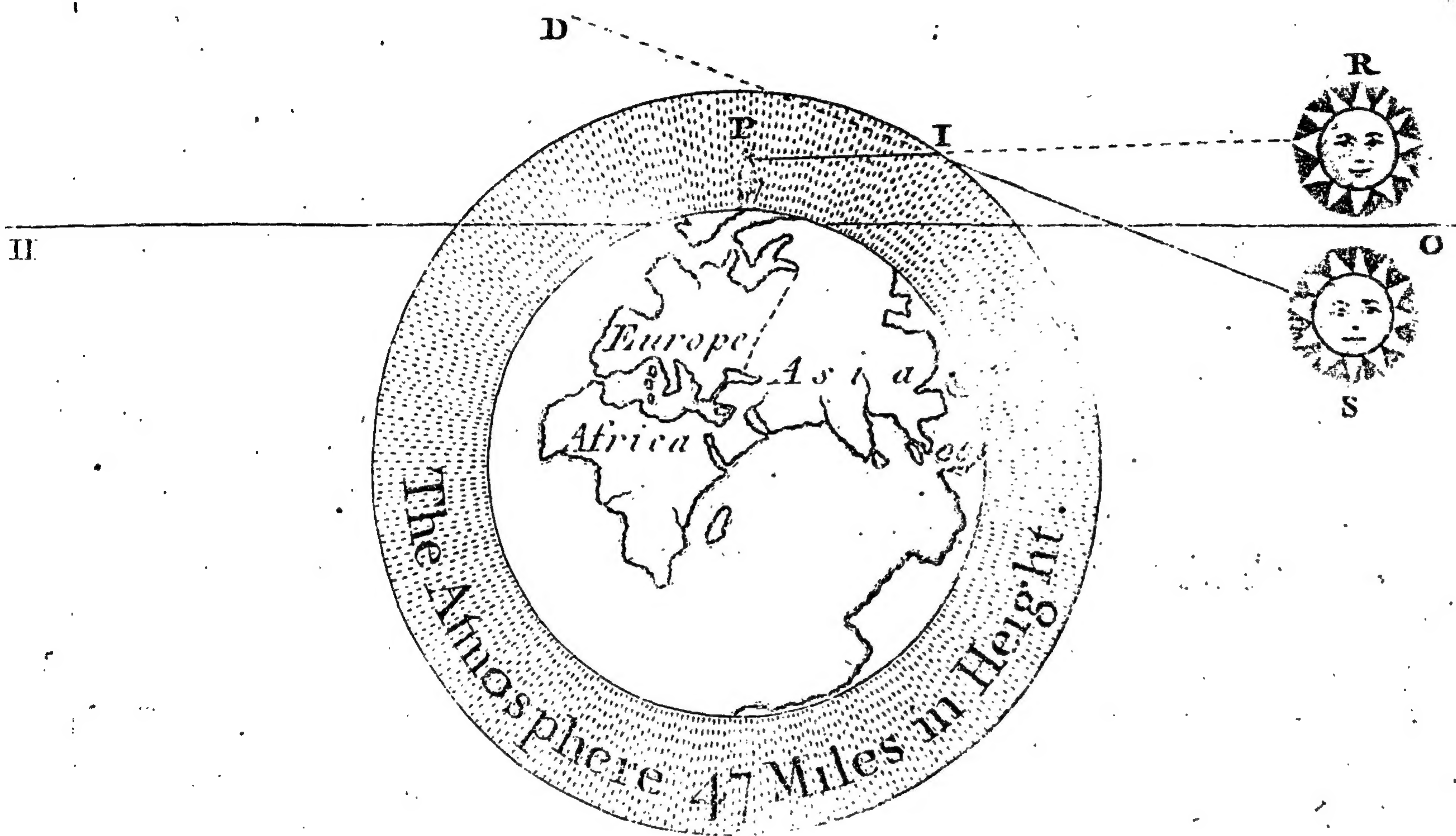
The little *Unevenness* of the Earth's Surface, arising from Hills and Vales, is no material Objection to its being considered as *round*; since the highest *Mountains* bear not so great a Proportion to the Bulk of the Earth itself, as the little *Risings* in the Coat of an *Orange*, bear to the Bigness of that Fruit.

Those People, which inhabit that Part of the Globe exactly under us, are called **ANTIPODES**: their Feet are over against Ours; when 'tis Noon with us, 'tis Midnight with them; and *our* Summer is *their* Winter.

† The general Opinion of the *Ancients* was, that the Earth was a large extended plain Surface like a round Table; and all below was *Hades* or *Hell*; and that the *Sun* and the rest of the Heavenly Bodies descended into the *Western Ocean* every Night, and rose out of the *Eastern* every Morning. And not many Ages ago, the Notion of *Antipodes* was zealously opposed: but all these Absurdities are now given up, being obliged to yield to *Observation* and *Experience*. For, our *Mariners* frequently sail round the Globe, and transact Business with the *Antipodes* of many Nations daily.

The EARTH rests upon *Nothing*; but is poised in the Heavens, and surrounded with a Number of small *Atoms*, called the *Atmosphere*, or Air, which gradually grows thinner and lighter, the higher we ascend from its Surface. Its whole Height is supposed to be about 46 or 47 Miles; but on the higher Mountains, as the *Alps* in *Italy*, and the *Andees* in *America*, it is so very *rare*, or *thin*, that we breathe with great Difficulty; and very probably, at the Distance of 6 or 8 Miles from the Earth, no *Animal* or *Bird*, could live.

The *Use* of this *Atmosphere* is not only to suspend the *Clouds*, furnish us with *Winds* and *Rain* †, and serve to the common Purposes of *Breathing*; but is also the Cause of the *Morning* and *Evening Twilight*, and of all the *Glory* and *Brightness* of the *Firmament*.

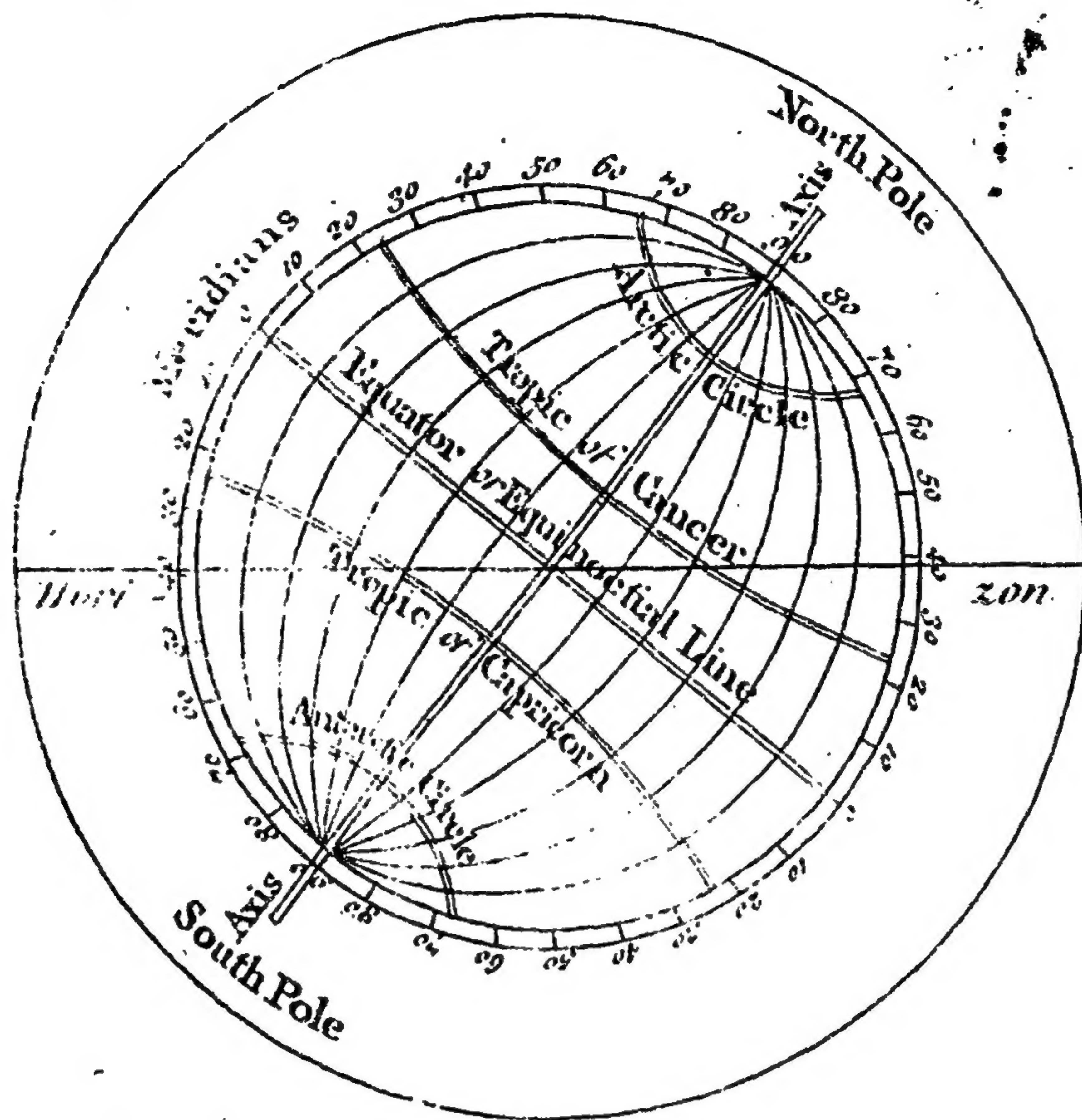


This Figure represents the Earth surrounded with its Atmosphere;—H O is the *Horizon* of a Person standing at P;—also, S represents the Sun as yet really under the Horizon, from which a Ray S I ascends, and falling upon the upper Part of the Air at I, is, by the Resistance it meets with there, bent out of its direct Course towards D, into the Oblique one I P; and so falling upon the Eye of the Spectator, he will then see the Sun in the Direction of this refracted Ray at R, a whole Breadth, or a little more, above its true Place.

By this means we are favoured with the Sight of the Sun about 3 Minutes and $\frac{1}{4}$ every Morning before it rises above the *Horizon*, and also as much every Evening after it sets below it; which, in one Year, amounts to more than 40 Hours; and so much *Sunshine* are all the Inhabitants on every Part of the Globe blessed with, more than they could be, without some such Divine Contrivance.

† *Clouds* are only Vapours or Steams of Water raised up and suspended in the Atmosphere. *Winds* are only the Particles of the Atmosphere put into Motion,—and, *Rains* are these Clouds falling again to the Earth, when the Atmosphere grows too light to support them.

GEOGRAPHERS, for the better understanding this Science, have imagined the Globe to be circumscribed, and divided with several *Lines* and *Circles*, whose *Names*, *Situation*, &c. are as here delineated.



The Line going through the Center of the Globe is called its *Axis*: the Ends are the *two Poles*; the upper one the *North*; the lower the *South*. On this Line the Earth is supposed continually to move round in 24 Hours to cause the Returns of *Day* and *Night*.

The Line or Circle encompassing the Middle of the Globe, dividing it into two equal Parts, between the North and South Poles, is called the *Equator* or *Equinoctial Line*. When the Sun is over this Line (as in *March* and *September*) it is *equal Day* and *Night* all the World over.

The Circles on each Side the Equator, 23 Degrees and $\frac{1}{2}$ from it, are called the *two Tropics*: They limit the Sun's greatest *Distance* from the *Equinoctial* either *Northward* or *Southward*.—That on the North-Side is the *Tropic of Cancer*; when the Sun is over this Line (as in *June*) 'tis our *Summer*, and the Days are at the longest.—That on the South-Side is the *Tropic of Capricorn*; when the Sun is over that (as in *December*) 'tis our *Winter*, and the Days are at the shortest with *us*; but at the longest with those who live on the South-Side of the *Equinoctial Line*.

The two Circles near the Poles, about 23 Degrees and $\frac{1}{2}$ from them, are called the two *Polar Circles*.—That at the North Pole is also called the *Arctic Circle*; the other at the South, the *Antarctic Circle*.

The Lines running from Pole to Pole across the *Tropics* and *Equinoctial* are called *Meridians*. There are generally 24 drawn upon the Globe, corresponding to the 24 Hours of Day and Night. When any of them (as the Earth turns round) is brought opposite the *Sun*, it is then *Noon Day* along that Line from Pole to Pole*.

The Line going across the Middle of the Globe, dividing it into two Hemispheres, is called the *Horizon*. When the Sun ascends above this Line in the East, it is Day with us; but when it descends below it in the West, it is Night. This is call'd also the *Rational*, or *True Horizon*: But besides this, there is a *sensible* or *visible Horizon*, which is that Circle surrounding us, and bounding our View, when we stand in the open Field.—The Horizon shews not only the rising and setting of the Sun, Moon, and Stars,—the Length of Day and Night, &c. but also points out the principal Points of the World; for the Places where the *Meridian* and *Horizon* cut each other, are called *North* and *South*; and the Places where the *Equator* and *Horizon* cut each other, are termed the *East* and *West*. You may see this more fully explained at Page 9.

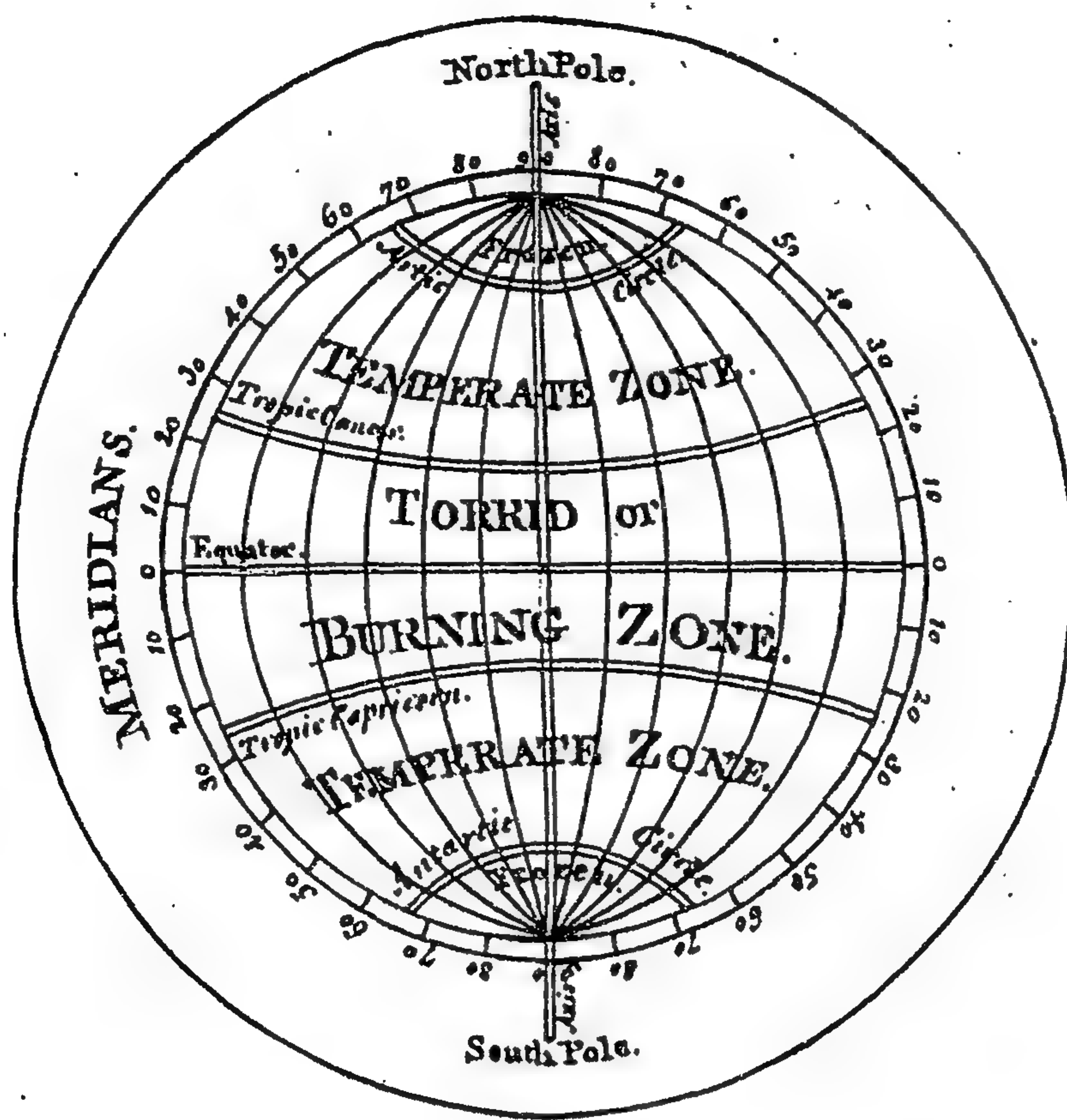
There is generally an *oblique Line* drawn from *Tropic* to *Tropic*, crossing the *Equinoctial*, (as may be seen in the Map at the Beginning of the Book) representing the Sun's apparent Path in the Heavens, which is called the *Ecliptic*; but as there cannot, in Fact, be any such Line upon the Earth, and as a much better Method of shewing the apparent Motion of the Sun may be substituted in its Room, I have, therefore, in this Scheme, omitted it.

Note, The *Equator*, *Ecliptic*, *Meridians*, and *Horizon*, are called *great Circles*, because they cut the Globe in two *equal Parts*; but the *Tropics* and *Polar Circles* are called *lesser Circles*, as they cut the Globe in two *unequal Parts*.

Every Circle on the Globe, whether great or small, is supposed to be divided into 360 equal Parts or Divisions, called *Degrees*; and each of these Degrees into 60 other equal Parts, called *Minutes*.—So that *every Circle*, of whatever Magnitude it is, contains 360 Degrees;—the *Half*, or *Semi-Circle*, 180;—and the *Quarter*, or *Quadrant*, 90.

* The *Meridians* are infinite in Number, for every Place from East to West may be supposed to have a separate one.—Of these *Meridians*, One is called the *First*, or *Chief Meridian*, from which the *Longitude* of Places begins to be reckoned; It is of great Note, and has been variously placed by *Geographers*; but now each Country fixes it at the Middle of their own *Capital City*.

As each Line upon the Globe has its distinct Name, so the several Spaces included by these Lines are particularly distinguished. They are called *Zones*, or *Belts*, and are *five* in Number.



All the Space between the two *Tropics*, (which is 47 Degrees broad) is called the *Torrid* or *Burning Zone*; because the Sun, being always over some Part of it, must make it exceeding hot and scorching.

The Spaces between the *Tropics* and *Polar Circles* (each 43 Degrees in Breadth) are called the two *Temperate Zones*; for in these the Heat is moderate, the Sun never coming over the Heads of the Inhabitants.

The Spaces included within the *Polar Circles* (each of which being 47 Degrees over) are the two *Frigid* or *Frozen Zones**; so called on account of the extreme Cold and Ice always found there.

Latitude is the nearest Distance of any Town or Place from the *Equator*, either Northward or Southward, accounted in Degrees and Minutes; each Degree being 60 computed, or 70 measured Miles.

Longitude is the Distance of any Place from a *fixed Meridian*, (as suppose that of *London*) either Eastward or Westward, in Degrees and Minutes.—Longitude has respect to *Time*; every Degree of which is equal to four Minutes.—Thus, if a Place lies one Degree to the *East* of us, it is four Minutes in Time *before* us; but, if it lies one Degree to the *West*, it is four Minutes *after* us.

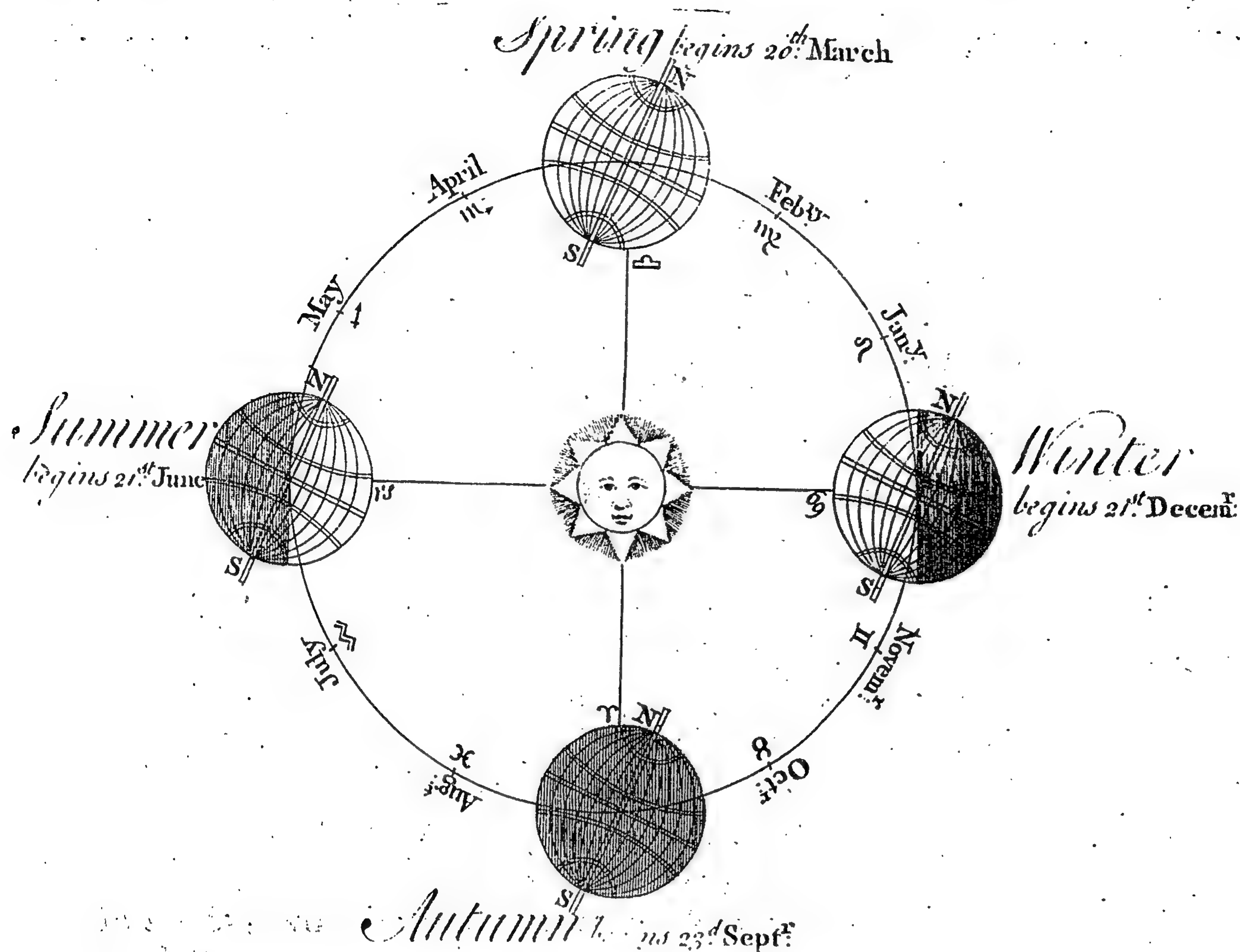
Note. A Degree of *Longitude* at the *Equator* is 60 Miles, equal to a Degree of *Latitude*; but then these Degrees are continually growing less and less, as the Meridian Lines approach each other, till they arrive at the Poles, where a Degree measures (you see) nothing at all.

* The *Kingdoms*, *Countries*, and *Seas*, situate in these several *Zones*, are seen by casting the Eye on the *Map* of the *World*, at the Beginning of the Book.

The

The MANNER in which the Earth revolves, to cause the various Changes in the Length of the Day, and *Vicissitudes* of the Year, is exhibited in the following Scheme.

The Earth, in its *annual* Motion, has its *Axis* always inclined * in the same Direction, (or *parallel* to itself) and moves from *West* to *East* in 365 Days 6 Hours, and upon this *Position* depends the *Variety* of all the *Seasons*.



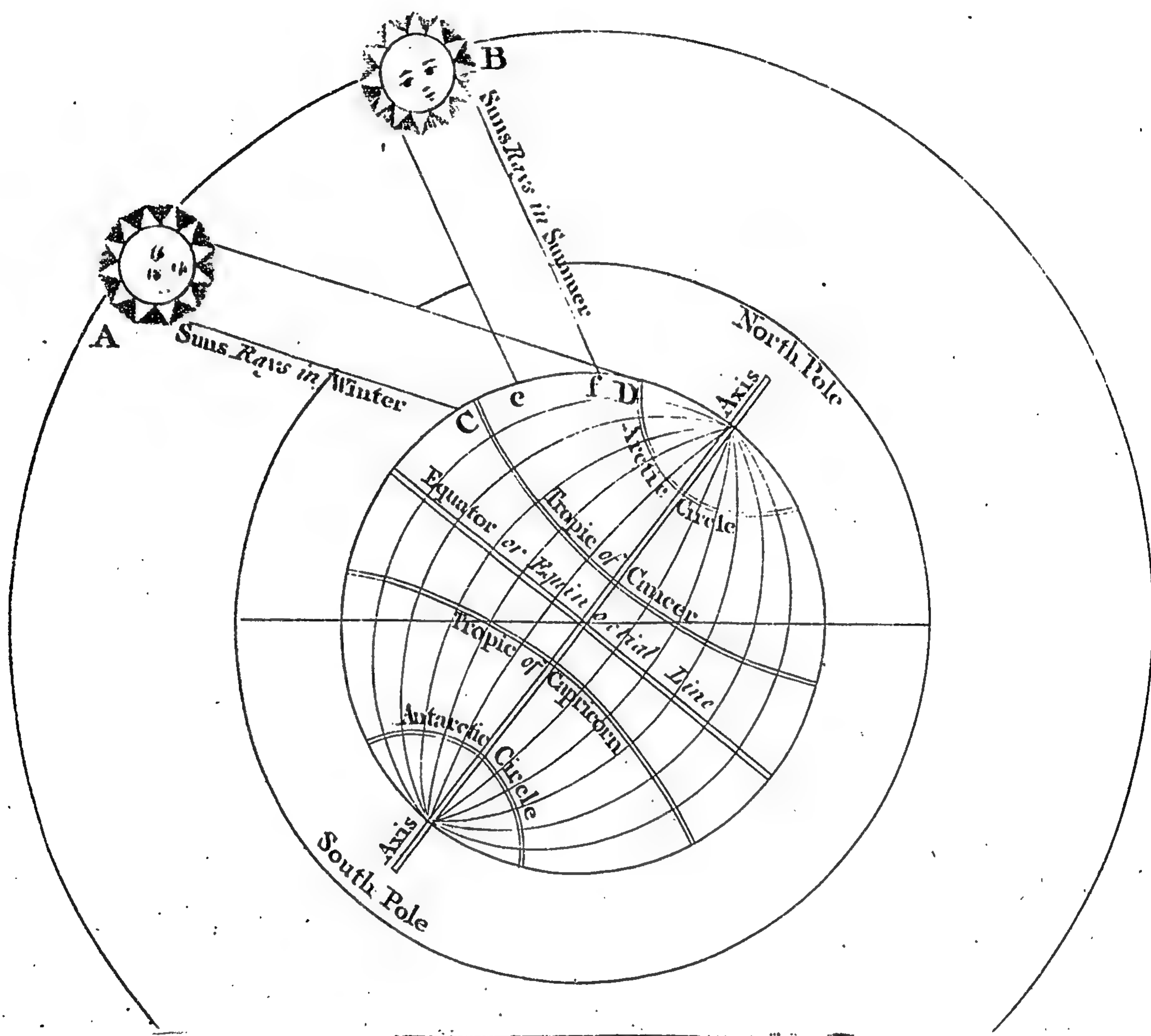
In the SPRING, the Sun is over the *Equator*: The Earth is illuminated from Pole to Pole; and the *Days* and *Nights* are equal all the Globe over. — In the SUMMER, the North Pole is turned to the Sun; he is over the *Tropic of Cancer*; our Days are now at the *longest*, and the South Pole is involved in Darkness. — In AUTUMN, the Earth is arrived to that Part of her Orbit opposite the Spring, and the Sun is got over the *Equator* again. Now both Poles are illuminated, and it is *equal* Day and Night as in the Spring. — In the WINTER, the South Pole becomes turn'd to the Sun, which is then over the *Tropic of Capricorn*; the Days are then at the *shortest* with us, and the North Pole is wrapt in Obscurity and Shade.

The *Earth* does not revolve in an exact *Circle*, but in an Orb a little *Elliptical*; it must, therefore, be sometimes *nearer* the Sun, sometimes farther from him: — Must sometimes *move slower*, and sometimes *faster*. This is the *Reason*, why our *Summer* half Year, when the Earth is *farthest* from the Sun, is *longer* than the *Winter* half, by about 8 Days, when it is *nearest*.

* The *Unlearned* generally think, that the *Earth* stands *still*, and the *Sun* moves, to cause Day and Night; and produce *Scripture* to confirm their Opinion: But they should remember, the *Scripture* was not given to teach *Geography* or *Astronomy*, but *Religion*; and therefore these Books, in this Respect, speak only according to the *Appearances* of Things; not as they are in *Fact*. See more of this in my *Astronomy*. In the mean Time, I would just observe, that every *Cook* daily shews the Absurdity of the vulgar Opinion: For, we never see them turn the Fire round the Meat; but the Meat always round the Fire; by which Means, it becomes far more equally warmed and dressed.

The nearer any Place is to the Pole, the longer are its Days in the Summer, and the shorter in the Winter: At the very Pole, the Day is six Months; and in Winter, the Night is just the same.

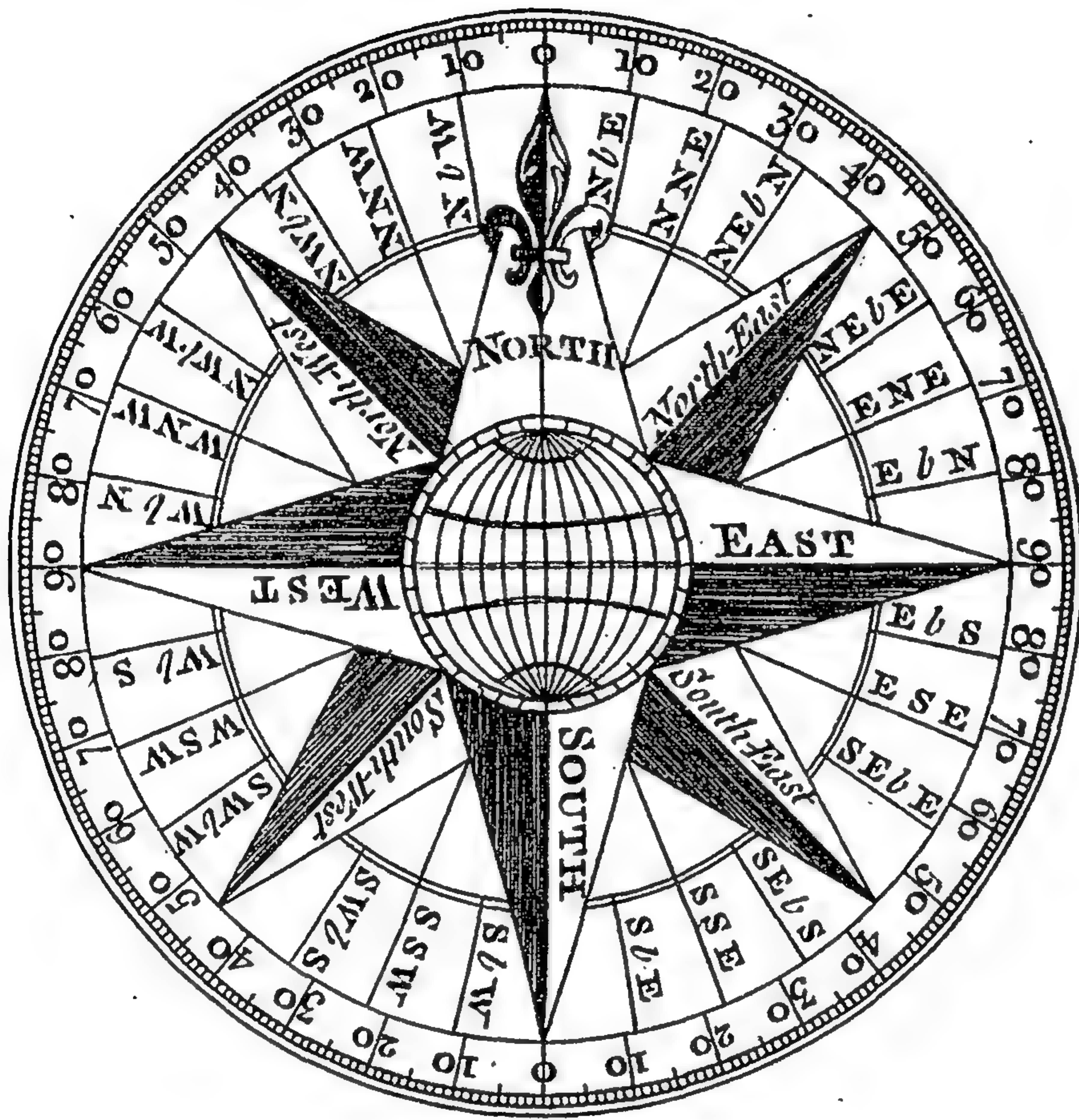
The Reason of the greater Heat in Summer than in Winter, is, because the Sun is not only *longer*, but *higher* above the Horizon; consequently, his Rays come to the Earth in a Direction more *perpendicular* to its Surface, and strike it more *forcibly* in Summer than in Winter, when the Sun is *lower*, and sends his Rays more *oblique* and *feeble*, and scattered over a larger Part of it.



Let A represent the Height of the Sun at Noon in *Winter*, and B the Height in *Summer*: Then in the former Case, the parallel Rays, which fall upon the Ground, and scatter over it from C to D, will, in the latter Case, occupy only the narrow Space *ef*; Consequently, as it is much *less*, it must be more *hot* than before. The Rays of the Sun, also, passing through a much greater Part of the *Atmosphere* in *Winter* than *Summer*, must come to us more *weak* and *faint* in the former State, than in the latter. These Circumstances, joined with the *longer Continuance* of the Sun with us in the *Summer*, than in *Winter*, is sufficient to produce the great Disproportion of *Heat* we experience in those two different *Seasons* of the Year.

That **LARGE CIRCLE**, which seems to surround us, when we stand upon some little Hill, or Eminence, in the open Fields, and bounds our View, is called the *Horizon*. Every Part of this Circle is exactly 90 Degrees from the Center of it over our Heads, which Point is called *Zenith*, and the Point of the Heavens, *opposite* or under our Feet, is called the *Nadir*.

This *Great Circle* is supposed to be divided into 4 equal Parts, respecting the four principal *Quarters* of the World.—*East, West, North, and South*, and each of those is also subdivided into 8 other equal Parts, making in all 32, which are called the 32 Points of the *Compass*; whose Names, Situation, &c. are as in the following *Figure*.



The *Learner*, perhaps, will not find the Time *lost*, he shall spend in committing these 32 Points of the *Compass* to *Memory*, as they will enable him to ascertain the *Direction* of the *Winds, Clouds*, or any *Object* from him.

If this *graduated Circle* be drawn upon Paper or PASTEBOARD, and a Wire touched on a Loadstone, be pasted on the under Side, and then hung by the Means of a little Brass Cap fixed in the Center, on a Pin erected in the Middle of a *Brass* or *Wood* Box covered with a Glass, it will always turn its Points to the correspondent Points of the World; consequently it becomes of infinite Use in conducting the *Mariner* through the extensive *Ocean*, and the *Traveller* over the pathless *Deserts*, which are met with in many Parts of the Earth.

Little *Machines* of this Sort, neatly fitted up for the Pocket, in small Brass Boxes, are to be had at any *Toy-Shop* in Town or Country, at *One Shilling* each.

The GLOBE, as I observed before, is composed of *Land* and *Water*.

The LAND is about *one third* of the whole Surface, and is generally divided into the following Parts, viz.

1. CONTINENTS, which are large Tracts of Land, containing many Kingdoms, and Countries; as Europe, Asia, Africa, &c.—2. ISLANDS, are Parts of Land surrounded by the Sea, as Britain, Ireland, Madagascar, and Japon.—3. PENINSULAS, are such Parts of Land, as are encompassed by Water, except one narrow Part, by which it is joined to the main Land, as Jutland at the Top of Germany, and Morea in Greece——4. ISTHMUS's are narrow Necks of Land joining the Peninsulas to the main Land, as the Isthmus of Darien, or Panama, in America: the *Isthmus* of *Corinth* joining the *Morea* to *Greece*——5. PROMONTARIES, or CAPES, are those high Parts of Land, which shoot far into the Sea, as Cape Verde, and the Cape of Good Hope, both in Africa——6. COASTS or *Shores* are those Parts of a Country, which border upon the Sea, as the Coast of *France*; the Coast of *Barbary*. Hence sailing near the Shore is called *Coasting*.

The Extent of the WATER on the Earth's Surface is far greater than that of the Land; it is computed to be *two thirds* of the whole Globe, and is distinguished by the following Divisions.

1. OCEANS, which are vast Collections of Water free from Land, as the *Atlantic*, *Ethiopic*, and *Pacific* Oceans.—2. SEAS, are less Extensions of Water, almost surrounded by Land, as the Mediterranean, Baltic, and Euxine; all the rest are but *Parts* of Oceans, and receive their Names from the Land that lies next them: as the *Irish Sea*, the *British Seas*.——3. LAKES, are Tracts of Water, wholly surrounded by Land, as the Lake of Geneva, the Caspin and Dead Seas.——4. GULPHS, are only *Parts* of the Sea running up into, and every-where bounded with Land, except one Part by which it communicates with the Sea; as the Gulphs of Bothni, Venice, Persia, and Florida——5. STREIGHTS are narrow Passages of Water joining one Sea to another, as the Straights of Gibraltar, leading into the *Mediterranean*, the Straights of Babalmandel, leading into the *Red Sea* *.

We come now to describe the GRAND DIVISIONS of the Earth, viz. *Europe*, *Asia*, and *Africa*, called the *Old World*, being all that was known to the Ancients: And *North* and *South America*; called the *New World*, on Account of their being discovered but about 280 Years ago.

* If a *Gulph* is very large, it is called an Inland Sea, as the *Mediterranean Sea*. If it is not so large, nor runs so far into the Land, it is called a Bay; as the *Bay of Biscay* in *France*. If it is but small, and runs but a little Way into the Land, it is called a *Creek*, or *Haven*; a Station or Road for Ships; as *Milford Haven* in *Wales*.

EUROPE is bounded on the *North* by the Frozen Ocean—on the *East* by Asia, and the Rivers Don, Walga, and Oby—on the *South* by the Mediterranean,—and on the *West* by the great Atlantic Ocean, being about 3000 Miles in *Length*, and 2500 in *Breadth*. It is the least Quarter, but of the most Renown, for the Temper of the *Air*; the Fruitfulness of the *Soil*; Study of the *Arts* and *Sciences*; but above all, for the Establishment of the *Christian Religion*. It contains the following *Kingdoms* and *States*.

	Kingdoms.	Length.	Brardth.	Chief City.	Dist. & Bearing from London.	Diff. of Time. from London.	Religions.
British Empire.	England	306	300	London	Miles. * * *	H. M. * * *	Lutherans
	Scotland	300	150	Edinburgh	270 N.	0 12 aft.	Calvinists
	Ireland	300	150	Dublin	250 N. W.	0 26 aft.	Lutherans
	Norway	1000	300	Bergen	550 N.	0 24 bef.	Lutherans
	Denmark	240	180	Copenhagen	480 N. E.	0 50 bef.	Lutherans
	Sweden	800	500	Stockholm	750 N. E.	1 10 bef.	Lutherans
	Russia	1500	1100	Petersburg	1140 N. E.	2 4 bef.	Greek Church
	Poland	700	680	Warsaw	760 E.	1 24 bef.	Papists
	Prussia	400	160	Berlin	540 E.	0 59 bef.	Lutherans
	Germany	600	500	Vienna	650 E.	1 5 bef.	Papists
Nether- lands.	Holland	160	100	Amsterdam	150 E.	0 18 bef.	All Religions
	Flanders	180	150	Brussels	180 S. E.	0 16 bef.	Papists
	France	600	500	Paris	160 S. E.	0 9 bef.	Papists
	Spain	700	500	Madrid	690 S.	0 17 aft.	Papists
	Portugal	300	100	Lisbon	840 S. W.	0 38 af.	Papists
	Switzerland	260	100	Bern	420 S. E.	0 28 bef.	Calvin and Papists
	Lombardy	Several small States; Piedmont, Montferrat, Milan, Parma, Modena, Mantua, Venice, Genoa, Tuscany, &c. Chief Towns are, Turin, Casal, Milan, Parma, Modena, Mantua, Venice, Genoa, Florence.					
Italy.	Papedom	240	150	Rome	780 S. E.	0 52 bef.	Papists
	Naples	270	180	Naples	870 S. E.	1 0 bef.	Papists
	Hungary	300	200	Buda	780 S. E.	1 17 bef.	Papists
Turkey in Europe.	Danubian } Provinces }	600	420	{ Constantinople	1320 S. E.	1 58 bef.	Mahometans, with some
	Lit. Tartary	380	240	Caffa	1500 E.	2 24 bef.	Jews and
	Greece	400	240	Athens	1230 S. E.	1 37 bef.	Christians.

The *Situation* of the several *Kingdoms* and *States*, with the *principal* Towns in each, you will find inscribed in the adjoining Map, with their *Distances* and *Positions* exactly laid down with respect to each other.

The *Europeans* in general are well made, and tolerably fair, except in *Spain*, where they begin to be *swartby*:—In *Dress*, they are fond of imitating the *French*.—The *Spaniards* and *Hungarians* wear *Whiskers*.—The *Turks* long Beards, Turbants, and a long Vest tied with a Sash.—The *Turkish Ladies* Dress much resembles that of the Men.

The **COMMODITIES** of these Countries are, in the *Northern Parts*, as in *Norway, Sweden, and Denmark*,—*Pitch, Tar, Rosin, Hemp, Deals, Masts, Oaks, Furs, Iron, Coal, Tin, and Fish*.—In the *Middle*, as *Great Britain, northern Part of France, Holland, Germany, and Poland*,—*Corn Cyder, Perry, Hops, Cattle, Salt, Lawn, Lace, Cambrick, Woollen Cloth, Leather, Gloves, Clocks, Watches, Hardware, Toys, Paper, Hats, and Glass*.—In the *South*, as in *Portugal, Spain, Italy, and Turkey*,—*Wine Allom, Amber, Rice, Raisins, Oranges, Lemons, Marble, Cottons, Velvets, and Mohair*.

The **ISLANDS** of this Quarter are, in the *North*,—*Greenland*, famous for its *Whale Fishery*.—And *Iceland*, in which is the burning Mountain *Hecla*, supposed by its frequent *Eruptions*, to be the Cause of the *Northern Lights*; It belongs, with the little Isles of *Farro*, together with those of *Zealand and Funen*, &c. in the *Baltic*, to the Crown of *Denmark*.—Near *Great Britain*, are the *Shetland Isles*, the *Western Isles*, *Orkneys*, *Man*, *Anglesea*, *Scilly*, *Wight*, *Jersey*, *Guernsey*, subject to the *English*.—On the *West*, are the *Azores*, Nine in Number, the Chief, *St. Michael*; *St. Maria*, *Torcera*, and *Graciosa*; the Trade is *Wine and Sugar*; and all belong to the King of *Portugal*.—In the *Mediterranean Sea* are *Ivica*, *Majorca*, belonging to *Spain*—*Minorca* to *England*; and *Corfica*, belonging to the *French* or *Genoese*.—*Sardinia*, a Kingdom of itself.—*Sicily*, belongs to the King of *Naples*, and in it is the burning Mountain *Etna*.—*Malta* belongs to its own Governor, called the *Grand Master*.—*Corfu*, *Cephalonia*, and *Zant*, are subject to the *Venitians*.—*Cyprus*, *Candia*, *Rhodes*, *Patmos*, and the Cluster of small ones in the *Archipelago*, belong to the *Turks*.

The principal **MOUNTAINS** in this Part of the World are the *Dolphbrino Hills*, between *Sweden* and *Norway*;—the *Hyperborean Mountains* in the north Part of *Muscovy*;—the *Caparthen Mountains* in the South Part of *Poland*;—the *Pyrenean Hills* between *Spain* and *France*;—the *Alps* between *Italy* and *Germany*;—the *Appenine Hills* dividing *Italy* into *East* and *West*;—*Vesuvius*, a remarkable burning Mountain near *Naples*;—the *Peak* in *England*;—*Plinlimmon* in *Wales*;—and *Grampiar* and *Chevoit Hills* in *Scotland*.

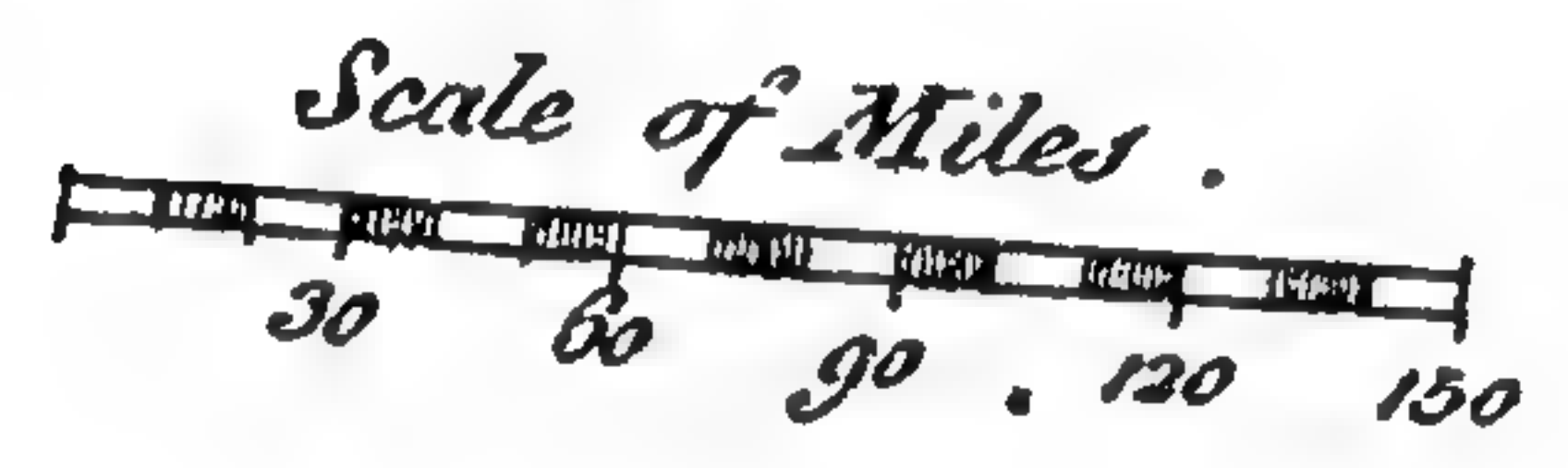
In this Quarter, the most noted **RIVERS** are, the *Thames*, *Severn*, and *Humber*, in *England*; *Forth*, *Tay*, and *Tweed*, in *Scotland*;—*Shannon*, *Boyn*, and *Barrow*, in *Ireland*;—*Rhine*, *Elbe*, and *Oder*, in *Germany*;—*Weisel*, *Neefer*, and *Neeper*, in *Poland*;—*Tayo* and *Duero* in *Portugal*;—the *Ebro* and *Guadalquiver* in *Spain*;—*Tiber* and *Po* in *Italy*;—*Don*, *Walga*, and *Dwina*, in *Russia*; *Seine*, *Loire*, *Rhone*, and *Garonne*, in *France*; and the *Danube*, which runs all through *Germany*, *Hungary*, *Turky* in *Europe*, and empties itself into the *Black Sea*.

The greatest **CURIOSITY** in this Quarter is the *Whale Fishery*, among the *Fields of Ice*, which have been increasing for Ages upon the Coast of *Greenland*. A *Whale* is usually 60 or 80 Feet long; affords from 60 to 100 Barrels of *Oil*, from his *Fat*; and 4 or 500 Pieces of *Whalebone*, which is taken from his *Jaws* or *Gills*. This Trade is chiefly carried on by the *English* and *Dutch*. One *Whale* is valued generally at 1000, or 1200 *l*.

Long. West 15 from London 10 Orkney I^s Pomona 0 Long. East

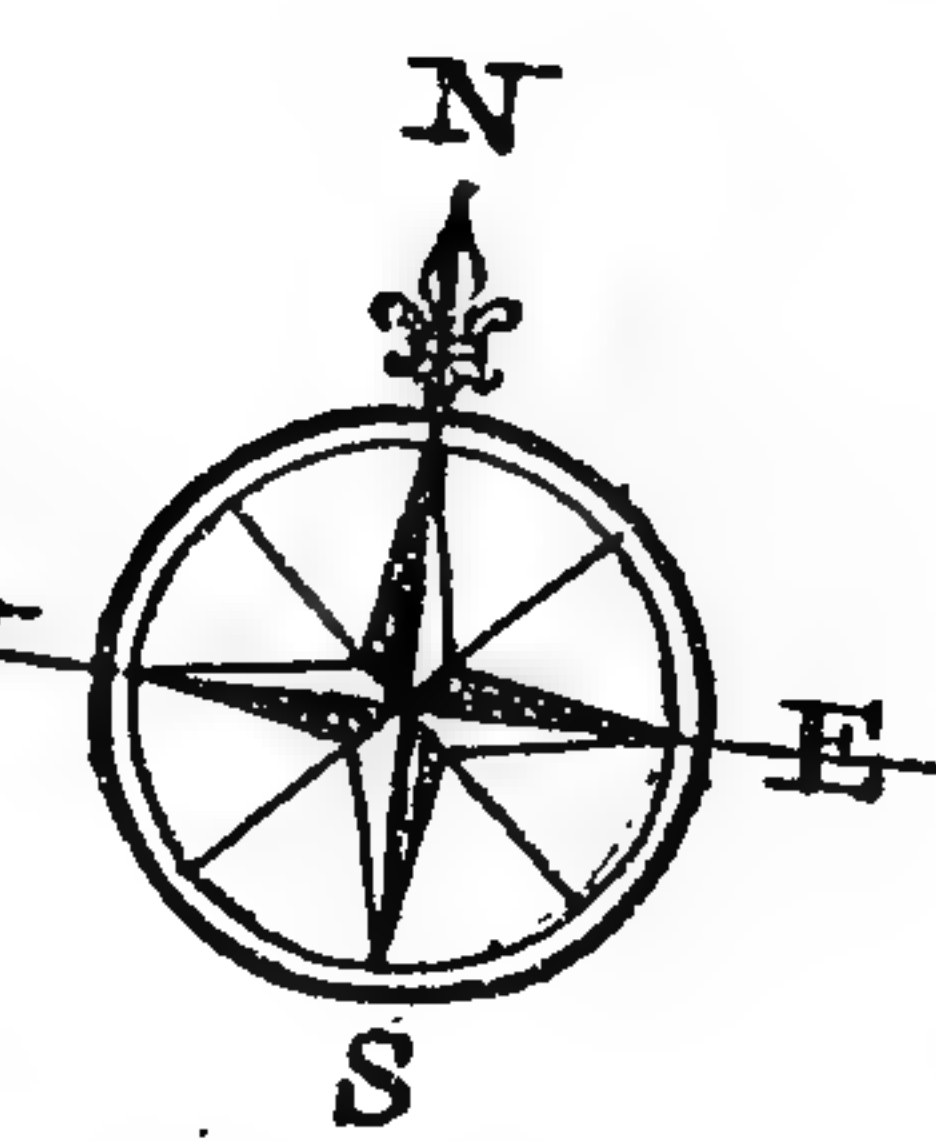


BRITISH
EMPIRE



WESTERN

OCEAN



55

55

50

50

60 Minutes after London 40 20 Minutes before London



Tho. Bowen sculp.

THE BRITISH EMPIRE lies on the Western Part of *Europe*, and is wholly surrounded by the Sea: It contains—*Great Britain*, *Ireland*, and the *Isles* thereunto adjoining; as expressed in this Map.

Great Britain is in Length 630 Miles, but of different Breadths in different Places; is surrounded by the Sea, and contains *England*, *Scotland*, and *Wales*; being the largest Island in *Europe*.

England is parted on the *North* from *Scotland* by the Rivers *Tweed* and *Solway*; on the *East* it is washed by the *German Ocean*; on the *South* by the *Channel*; and on the *West* parted from *Wales* by a Line drawn from the Isle of *Anglesey* round *Flintshire*, by *Shropshire* and *Herefordshire*, down to the End of the River *Severn*.

England is about 360 Miles long, and 300 broad:—Contains 40 Counties: *Wales* is 124 Miles long, and 100 broad, and contains 12 Counties. The Name and Chief Town of each County, with its Distance from London, the Capital City,—the Number of *Parishes*, *Market Towns*, and *Members of Parliament* are expressed in the following Table.

Counties	Circ.	Mark. Towns	Par.	Mem. Parl.	Chief Towns	Dist. f. Lond.	Counties	Circ.	Mark. Towns	Par.	Mem. Parl.	Chief Towns	Dist. f. Lond.
Bedfordshire	73	10	116	4	Bedford	47	Rutlandshire	40	2	48	2	Okeham	94
Berkshire	120	12	140	9	Reading	39	Shropshire	135	17	170	14	Shrewsbury	158
Buckinghamshire	138	16	185	14	Buckingham	57	Somersetshire	204	35	385	18	Bristol	117
Cambridgeshire	130	9	163	8	Cambridge	51	Staffordshire	141	19	150	9	Stafford	123
Cheshire	112	13	68	4	Chester	182	Suffolk	140	30	575	16	Ipswich	69
Cornwall	150	26	161	44	Launceston	210	Surry	112	13	140	14	Guildford	30
Cumberland	168	15	90	6	Carlisle	301	Sussex	158	17	312	28	Chichester	63
Derbyshire	130	11	106	4	Derby	126	Warwickshire	135	14	158	7	Warwick	93
Devonshire	200	39	394	26	Exeter	169	Westmoreland	120	8	26	4	Appleby	267
Dorsetshire	150	22	248	20	Dorchester	123	Wiltshire	140	22	304	34	Salisbury	80
Durham	107	9	118	4	Durham	256	Worcestershire	130	12	152	9	Worcester	112
Essex	146	27	415	8	Colchester	51	Yorkshire	320	56	563	30	York	197
Glostershire	138	30	280	8	Gloicester	104							
Hampshire	100	24	253	24	Southampton	76	NORTH WALES.						
Hertfordshire	130	20	120	6	Hertford	21	Anglesey	80	3	74	2	Beaumaris	241
Herefordshire	120	8	176	8	Hereford	132	Carnarvonshire	110	5	68	2	Carnarvon	251
Huntingdonshire	67	6	79	4	Huntingdon	57	Denbighshire	116	6	57	2	Denbigh	209
Kent	160	33	408	18	Canterbury	56	Flintshire	80	5	28	2	Flint	194
Lancashire	170	27	61	14	Lancaster	233	Merionethshire	108	3	37	1	Hatlech	223
Leicestershire	96	12	192	4	Leicester	99	Montgomeryshire	94	5	47	2	Montgomery	161
Lincolnshire	180	35	630	12	Lincoln	135							
Middlesex	81	6	200	6	LONDON		SOUTH WALES.						
Monmouthshire	80	7	127	4	Monmouth	129	Brecknockshire	106	4	61	2	Brecknock	163
Norfolk	140	32	660	12	Norwich	109	Cardiganshire	94	5	77	2	Cardigan	224
Northamptonshire	120	14	326	9	Northampton	66	Carmarthenshire	108	5	87	2	Carmarthen	208
Northumberland	160	13	460	8	Newcastle	270	Glamorganshire	112	9	118	2	Cardiff	165
Nottinghamshire	90	9	168	8	Nottingham	121	Pembrokeshire	93	7	45	3	Pembroke	236
Oxfordshire	130	14	280	9	Oxford	53	Radnorshire	90	4	53	2	Radnor	150

The RIVERS of principal Note in *England* are—the *Thames*, *Severn*, *Trent*, *Humber*, *Medway*, *Ouse*, *Tine*, *Avon*, *Derwent*, *Mersey*, &c.—In *Wales*, the *Wye* and *Dee*.

The most noted HILLS in *England* are—the *Peak* in *Derbyshire*; *Malvern* in *Worcestershire*; *Mendip-Hills* in *Somersetshire*.—In *Wales*—*Snowden-Hills*, *Plinlimon*, and the *Black-Mountains*.

In *England* are 22 BISHOPRICKS; in *Wales* 4; which make in all 26 Bishops; of which 2 are *Arch-Bishops*, *Canterbury* and *York*. There are also in *England* 2 famous Universities—*Oxford* and *Cambridge*: The former of which contains 20 *Colleges* and 5 *Halls*; the latter contains 12 *Colleges* and 4 *Halls*.—In *Wales* there is no University.

The established RELIGION in *England* and *Wales* is *Lutheranism*. The *Inhabitants* are about 7 Millions in Number; of which almost 1 Million and a Half live in London.

SCOTLAND lies on the North of England, parted from it by the Rivers *Tweed* and *Salway*; and is about 300 Miles long and 150 broad. It is divided by the River *Tay*, which runs near the Middle of it, into 2 Parts;—*Highlands* and *Lowlands*, which contain 34 *Shires*, in which are many populous Towns and Villages, but the Capital City is *Edinburgh*, distant from London about 270 Miles North.

In the *Lowlands* (next England) are these 22 COUNTIES.—1. *Tiviotdale*, 2. *March*, 3. *Tweeddale*, 4. *Liddesdale*, 5. *Esbedale*, 6. *Anandale*, 7. *Niddesdale*, 8. *Galloway*, 9. *Carrick*, 10. *Kyle*, 11. *Cunningham*, 12. *Arran*, 13. *Clydesdale*, 14. *Lenox*, 15. *Sterling*, 16. *Fife*, 17. *Strathern*, 18. *Menteith*, 19. *Argyle*, 20. *Cantire*, 21. *Lorne*, and 22. *Lothien*.

In the *Highlands* are these 13 COUNTIES.—1. *Lochabar*, 2. *Broadalbin*, 3. *Perth*, 4. *Athol*, 5. *Angus*, 6. *Merns*, 7. *Mar*, 8. *Buchan*, 9. *Murrey*, 10. *Ross*, 11. *Sutherland*, 12. *Caithness*, and 13. *Strathnaver*.

The chief CITIES are the 4 Universities; viz. *Edinburgh*, *Aberdeen*, *Glasgow*, and *St. Andrews*.

The principal RIVERS in Scotland are the *Tweed*, *Clyde*, *Tay*, and *Spay*, all navigable; besides many *Lakes*, of which *Lemund* and *Ness* are the most remarkable.

The MOUNTAINS of Note are the *Chivot-Hills*, and those of *Albany*.

The established RELIGION here is the *Presbyterian*:—Consequently they have no *Bishops*.—The *Inhabitants* about 1 Million and a Half.

IRELAND lies West of England, is wholly surrounded by the Sea, and parted from *Great Britain* by *St. George's Channel*, which in some Places is 60 Miles over, in others not so much as 20. *Ireland* is in Length about 300 Miles, in Breadth about 150. 'Tis usually divided into 4 Provinces—*Linster*, *Munster*, *Connaught*, and *Ulster*, which contain 32 Counties, in which are several Cities and populous Towns; but the Capital is *Dublin*, about 250 Miles North West of London.

In LINSTER are 12 Counties——1. *East-Meath*, 2. *West-Meath*, 3. *Louth*, 4. *Longford*, 5. *Kings-County*, 6. *Queens-County*, 7. *Catherlough*, 8. *Kilkenny*, 9. *Kildare*, 10. *Waxford*, 11. *Wicklow*, and 12. *Dublin*.

In MUNSTER are 5 Counties——1. *Cork*, 2. *Kerry*, 3. *Limerick*, 4. *Tipperary*, and 5. *Waterford*.

In CANNAUGHT are 6 Counties——1. *Sligo*, 2. *Letrim*, 3. *Roscommon*, 4. *Galway*, 5. *Mayo*, and 6. *Clare*.

In ULSTER are 9 Counties——1. *Antrim*, 2. *Down*, 3. *Armagh*, 4. *Cavan*, 5. *Londonderry*, 6. *Donnegal*, 7. *Fermanagh*, 8. *Tyron*, and 9. *Monagan*.

Their noted CITIES besides *Dublin*, are *Limerick*, *Waterford*, *Kinsale*, *Cork*, *Athlone*, *Galloway*, *Londonderry*, &c. They have 4 Arch-Bishops, viz. *Armagh*, *Dublin*, *Cashel*, and *Tuam*; and 18 Bishopricks.—*Dublin* is their only University, and is one of the largest and finest Cities in Europe.

The most noted RIVERS here are the *Shannon*, *Barrow*, *Saver*, *Boyn*, *Nuor*, and *Blackwater*.—The Country abounds in *Lakes*, but the chief are—*Lough-Earn*, *Lough-Neagh*, and *Lough-Corrib*.

The chief MOUNTAINS are *Knock-Patrick*, *Slew-Bloemy*, and *Curlew-Hills*.

The RELIGION established here is *Lutheranism* as in England; but the *Inhabitants* professing *Papery* are more than 3 Parts in 4 of the whole Kingdom. The *People* are about 1 Million.

The ISLANDS round Great-Britain are the *Shetland* and *Orkneys* North of Scotland; they are many but small, the chief *Maitland* and *Pomona*.—The *Western Islands*, *Lewis*, *Sky*, *Mull*, *Vist*, *Jura*, *Ila*, *Annan*, and *Bute*.—In the *Irish Channel* are *Man* and *Anglesey*.—In the *English Channel* are *Whight*, *Fersey*, *Guernsey*, *Shark*, and *Alderney*. And at the Lands End are the little, but dangerous Isles of *Scilly*.



A SIA lies East of Europe, is about 4800 Miles *long*, and 4300 *broad*, bounded on the *North* by the Frozen Ocean, by the Pacific on the *East*, by the Red Sea on the *West*, and the Indian Ocean on the *South*. This, though the Second, is yet the *principal* Quarter of the Globe; for here our *first Parents* were created, and placed in the Garden of *Eden*; here once stood the famous *Tower of Babel**. In this Country our SAVIOUR was born, and compleated our Redemption. *This* was, in short, the Theatre of almost every Action recorded in the sacred Scriptures. It is divided into many principal *Regions*, whose *Names*, *Extent*, chief *Cities*, &c. are as under.

	Nations.	Length	Breadth	Chief City.	Dist. & Bearing from London.	Diff. of Time from London.	Religions.
Tartary.	Russian	The Bounds of these Parts are unlimited, each Power pushing on his Conquests as far as he can.		Tobolskoi	2160 N. E.	4 10 bef.	Christians & Pagans
	Chinese			Chynian	4480 N. E.	8 4 bef.	Pagans
	Mogulean			Tibet	3780 E.	5 40 bef.	Pagans
	Independant			Samercand	2800 E.	4 36 bef.	Pagans
Turkey in Asia.	China	1440	1000	Pekin	4320 N. E.	7 24 bef.	Pagans
	Moguls	2000	1500	Delly	3720 E.	5 16 bef.	Mahomet. & Pagans.
	India	2000	1000	Siam or Pegu	5040 E.	6 44 bef.	Pagans
	Persia	1600	1200	Ispahan	2460 E.	3 20 bef.	Mahometans
	Arabia	1300	1200	Meccha	2640. S. E.	2 52 bef.	Mahometans
	Syria	270	160	Aleppo	1860 E.	2 30 bef.	Christ. & Mahomet.
	Holy Land	210	90	Jerusalem	1920 S. E.	2 24 bef.	Christ. & Mahomet.
	Natolia	750	308	Bursa or Smyrna	1440 S. E.	1 48 bef.	Mahometans
	Diarbick or Mesopotamia	560	310	Bagdad	2160 E.	2 56 bef.	Mahometans. with some few Christians.
	Turcomonia	360	300	Erzerum	1860 E.	2 44 bef.	
	Georgia	* * *	* * *	Teffis	1920 E.	3 10 bef.	

* The *Turks*, *Persians*, *Moguls*, and *Chinese*, are of good Shape and Complexion; The *Men* wear *Turbants*, *Vests*, and *Slippers*; the *Women* dress much like the Men, only they wear a stiffened Cap like a *Mitre*, and their Hair down. The *Mogul Ladies* are fond of *Bracelets* on their Arms and Legs; *Rings* on their Fingers and Toes; *Jewels* in their Noses; and *Pendants* in their Ears: and the *Chinese Ladies* are remarkable for their *little Feet*; and the *Gentlemen* for long *Nails*. In *Siam*, *Pegu*, &c. the Inhabitants are *Tawney*, and Features *coarse*. The *Men* wear a Piece of Cloth wrapped round their Waist, and pull their *Beards* (as the *Chinese* and *Tartars* do) up by the Root. The *Women* have, besides the Piece about their Waist, another thrown round their *Breasts* and *Shoulders*, leaving the rest of the Body *bare*. The *Common People* near the Sea go almost *naked*.

* In this Quarter stood the Temple of *Diana*, at Ephesus in Natolia, burnt the Night Alexander the Great was born. Near to That stood the famous City *Troy*, totally destroyed by the Greeks, 1200 Years before Christ. Here also stood the seven *Churches* mentioned by St. John in the Revelations.—Also *Tyre* and *Sidon*, on the Coast of the Holy Land, once vast Cities of Trade, but now the Habitation of a few *Fishermen*.—Likewise *Sodom* and *Gomorrhah*, large Cities destroyed by Fire from Heaven for their Wickedness.—Also *Nineveh* and *Babylon*, great Cities in *Mesopotamia*, near *Bagdad*, now the Habitation of only *Owls*, *Tygers*, *Serpents*, and *Bats*. In the Holy Land stood the famous City and Temple of *Jerusalem*, destroyed by *Vespasian* about 70 Years after Christ.

The TRADE of these Parts in Tartary is in *Sables, Martins, Furs, Iron, &c.*—In the other Parts, *Silk, Garose, Soofees, Carpets, Tapestry, Mohair, Musk, Cinnamon, Aloes, Rhubarb, Ginseng, Myrrh, Camphire, Coffee, Incense, Manna, Spices, Nutmegs, Tea, Drugs, Gold Dust, Quicksilver, Diamonds, and fine China, Laquered and Japan Ware.*

In this Quarter are also *Camels, Dromedaries, Buffaloes, Elephants, Lions, Tygers, Serpents, Locusts, Scorpions, Ora-Ootans and Champanzeys*, which are Animals almost as big as a Man, and greatly resemble the *Human Shape*.

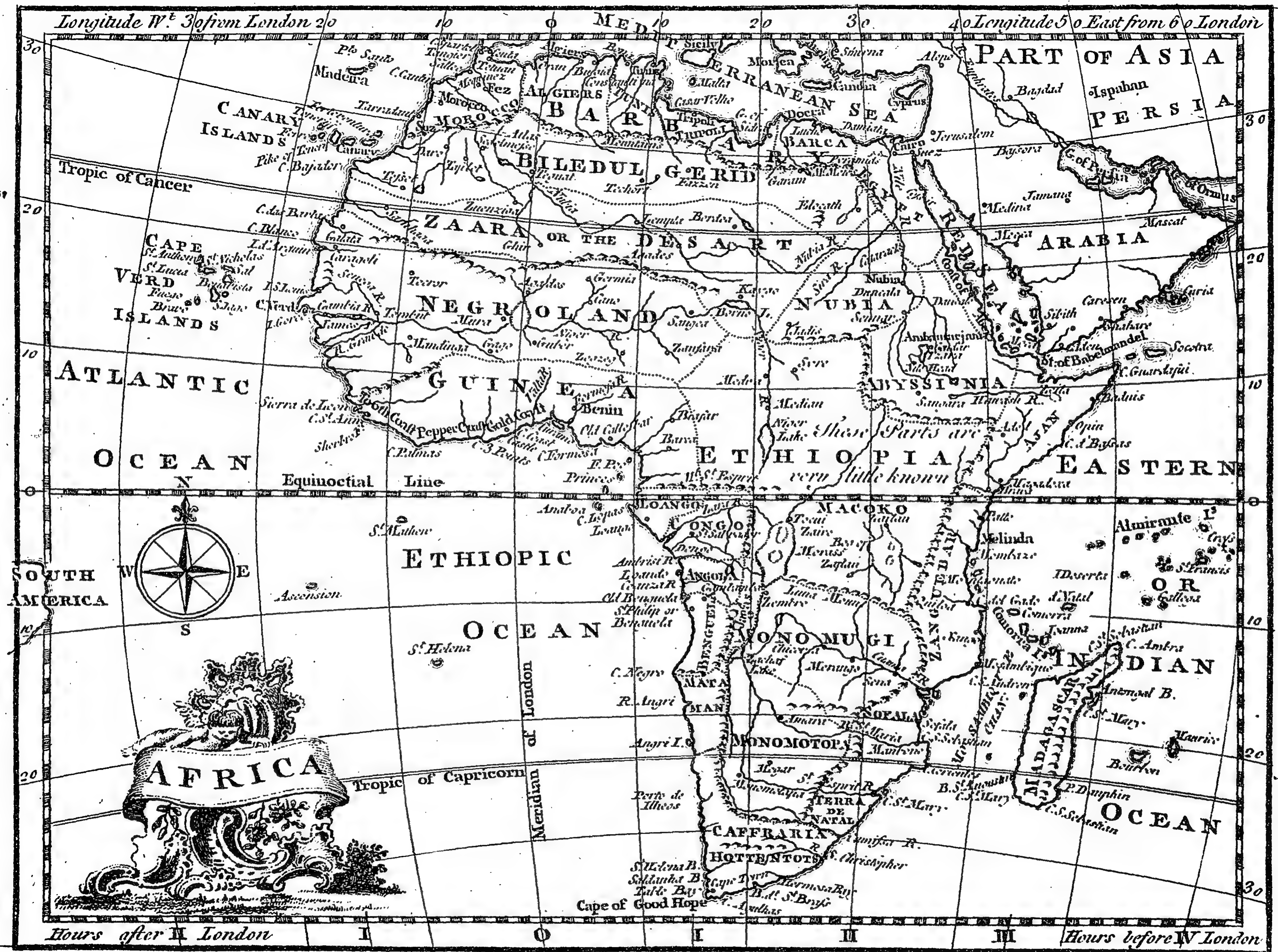
The ISLANDS in *Asia* are those of *Japon*, as *Japon* itself, *Tonsa* and *Bongo*,—also *Formosa*,—the *Bashee* Isles, very small,—*Aynan* and *Macco*.—The *Ladron* Isles, the chief *Guam* and *Tinian*.—The *Phillippine* Isles 11,000 in Number, chiefly small ones; the principal are *Luconia, Mindanao, and Tendaye*.—The *Moluccas* or *Clove* Islands, the chief *Gilolo, Ceram, Macassar, Amboyna, and Banda*, where the *Nutmegs* grow.—The *Sunda* Isles, *Borneo, Java, and Sumatra, &c.*—The *Andaman* and *Nicobar* Isles, all small.—The *Maldives*, many Thousands very small, in the Indian Sea,—and *Ceylon*, or fine *Cinnamon* Isle, near the Coast of *Coromandel*.

Most of these Islands lying near or under the *Line*, afford great Quantities of *Sugar and Spice*, which the *Dutch* trade with to all Parts of the World. The Inhabitants, who are of a Tawney or Olive Colour, and go almost naked, use Bows and *poisoned Arrows*, are superstitious and gross Idolaters; and in some Places (it is said) offer their *Children* in *Sacrifices* to their *Idol Gods*.

The principal RIVERS in this Quarter are the *Tigris* and *Euphrates*, between Arabia and Persia.—*Tobol* and *Oby* in *Tartary*.—*Indus* in the Mogul's Empire.—*Ganges* in *India*,—the *Hoambo* or *Yellow River* in the North; and the River *Tay*, that runs by Canton, in the South of *China*.

The chief MOUNTAINS here are *Ararat*, near the Caspian Sea, on which the Ark rested after the Flood.—*Horeb* and *Sinai* in Arabia.—*Lebanon* in the Holy Land.—Mount *Taurus* running from East to West of all Asia.—*Imaus* in *Tartary*,—*Caucassus* between *Tartary* and the Great Mogul's Empire,—and the *Naugracut* Mountains in *Tibet*.

In this Quarter one great CURIOSITY is, the vast Brick Wall in *China*, 1500 Miles long, 30 Feet high, and broad enough for 8 Persons to ride abreast, fortified with a square Tower, at the Distance of every Mile: It was built about 1800 Years ago to keep out the roving *Tartars*, and it is at this Time very little decayed.—Another Curiosity is the wonderful *Tallow Tree*, which bears a Fruit, whose Kernel has all the Properties of Tallow, and of that the *Chinese* are said to make their *Candles*.



J. Gibson Sculp:

AFRICA is the third Quarter, situate to the South of *Europe*, and surrounded on all Sides by the Sea, except a narrow Neck of Land about 60 Miles over (called the Isthmus of *Suez*) which joins it to *Asia*, at the Top of the *Red Sea*. This Country is about 4300 Miles *long*, and 4200 *broad*, and lies chiefly in the *Torrid Zone*; the *Equator* running through the *Middle* of it. Here once dwelt the Queen of *Sbeba*, who, on paying a Visit to the Magnificent King *Solomon*, stood amazed at the Wisdom and Glories of his Court. Here we find a Race of People quite **BLACK**, having flat Noses, thick Lips, and Hair like *Wool**. This *Quarter* is generally divided as under.

	Nations.	Length.	Breadth.	Chief City.	Dist. & Bearing from London.	Diff. of Time from London	Religions.
Barbary.	Morocco	500	480	Fez	1080 S.	0 24 aft.	Mahometans
	Algiers	600	400	Algiers	920 S.	0 13 bef.	Mahometans
	Tunis	400	250	Tunis	990 S. E.	0 39 bef.	Mahometans
	Tripoli	700	240	Tripoli	1260 S. E.	0 56 bef.	Mahometans
	Barca	400	300	Tolemeta	1440 S. E.	1 26 bef.	Mahometans
	Egypt	600	250	Grand Cairo	1920 S. E.	2 12 bef.	Mahometans
	Bilidulgerid	2500	350	Dara	1565 S.	0 32 aft.	Pagans
	Zaara	2400	660	Tegeffa	1840 S.	0 24 aft.	Pagans
	Negroland	2200	840	Madinga	2500 S.	0 38 aft.	Pagans
	Guinea	1800	360	Benin	2700 S.	0 20 bef.	Pagans
Up. Ethiopia.	Nubia	940	600	Nubia	2418 S. E.	2 12 bef.	Mahom. & Pag.
	Abyssinia	900	800	Gondar	2880 S. E.	2 20 bef.	Christians
	Abex	540	130	Doncala	3580 S. E.	2 36 bef.	Chris. & Pagans
The <i>Middle Parts</i> , called <i>Lower Ethiopia</i> , are very little known to the Europeans.							
Lower Guinea.	Loango	410	300	Loango	3300 S.	0 44 bef.	Chris. & Pagans
	Congo	540	420	St. Salvador	3480 S.	1 0 bef.	Chris. & Pagans
	Angola	360	250	Loando	3750 S.	0 58 bef.	Chris. & Pagans
	Benguela	430	180	Benguela	3900 S.	0 58 bef.	Pagans
	Mataman	450	240	No Towns	* * *	* * *	Pagans
	Ajan	900	300	Brava	3702 S. E.	2 40 bef.	Pagans
	Zanguebar	1400	350	Melinda or Mozambique	4440 S. E.	2 38 bef.	Pagans
	Monomotapa	960	660	Monomotapa	4500 S.	1 18 bef.	Pagans
	Monemugi	900	660	Chicova	4260 S.	1 44 bef.	Pagans
	Sofola	480	300	Sofola	4600 S. E.	2 18 bef.	Pagans
	Terra de Nat.	600	350	No Towns	* * *	* * *	Pagans
	Caffaria or Hottentots	780	660	Cape of good Hope	5200 S.	1 4 bef.	Most stupid Pagans.

* Some Writers have supposed these People to be the Descendants of *Cain*; who for his Cruelty to his Brother, has that Mark set upon him.—Others have esteemed them to be a *different Species* of Beings, and therefore ranked them a *Link Lower* than us in the *Chain of Existence*:—whilst many have attributed that *dusky Hue* to the *Nature* of their *Diet*, and intense *Heat* of the Country.

Along the *Coasts* of the *Mediterranean*, in *Egypt*, *Bilidulgerid*, and *Zaara*, the People are of a *tawney* Complexion, and dress like the *Turks*; but in all *other Parts* of this Quarter, the Inhabitants are BLACK. The better Sort of *Negroes* wear thin Vests and white Caps, but the Poor go almost NAKED, having only a small Piece of Skin, or coarse Stuff wrapped about their Waist, The poor *Hottentots*, daubed over with *Grease* and *Soot*, and having their *Arms*, *Legs*, and *Neck* wrapped round with the *raw Guts* of Beasts, make a most despicable and *nasty* Appearance.

Through *Barbary*, *Nubia*, and *Egypt*, the COMMODITIES are *Rice*, *Figs*, *Raisins*, *Oranges*, *Lemons*, *Citrons*, *Almonds*, *Pomegranates*, *Olives*, *Senna*, *Dates*, *Leathers*, *Civit*, *Sugar*, and *Indigo*.—In *Negroland* and *Guinea*,—*Ostriches Feathers*, *Gold-Dust*, *Elephants-Teeth*, *Pepper*, and *Slaves*, which are chiefly purchased by the *English*, and transported to *America*.—The *Inland Countries* are said to be full of *Lions*, *Tygers*, *Monkeys*, *Rhinoceroses*, and *Crocodiles*: The Natives are little known. To the *South*, along the *Coast*, the Traffick is *Ambergrease*, *Musk*, *Civit*, *Lemons*, *Millet*, *Pearls*, *Gold-Dust*, &c. chiefly carried on by the *Dutch* and *Portuguese*; the former of which have a large Settlement at the *Cape of Good Hope*, and the latter many on the *Eastern* and *Western* Sides of the Continent.

The ISLANDS of this Quarter are, *Madagascar* the largest; the Inhabitants *black*, *wild*, *savage*, *naked*, and under no particular Governor. The Islands of *Cape Verde*, 10 in Number. *St. Vincent*, *St. Nicholas*, *Lucia*, *Antonia*, *Sal*, *Bonavista*, *Jago*, *Mayo*, *Bravo*, and *Fuego*, all subject to the *Portuguese*.—The *Canary Islands*, 14 in Number, the chief, *Teneriff*, *Ferro*, and *Canary*, belong to the Crown of *Spain*.—The *Madeira*, noted for *excellent Wine*, subject to the *Portuguese*.—The *Guinea Isles*, as *Princes*, *Po*, *Annobon*, *Thomas*, *Matthew*, &c. belong to the *Portuguese*. And the Isles *Ascension* and *St. Hellen*, belong to the *English*.

The principal MOUNTAINS here are, the *Lybian Mount*, between *Zaara* and *Egypt*;—*Mount Atlas*, between *Barbary* and *Bilidulgerid*, which gives Name to the neighbouring Ocean, called the *Atlantic Ocean*.—The Mountains of *the Moon* in *Ethiopia*, near the Empire of *Monemugi*.—And the *Pico* or *Peak* in *Teneriff*, one of the *Canary Isles*, in Form of a *Sugar Loaf*, supposed to be the highest in the World, and may be seen 40 *Leagues* distant.

The most noted RIVERS here are, the *Nile* in *Nubia* and *Egypt*:—The *Niger* running through all *Negroland*:—The *Gambia* and *Senegal*, on which the *English* and *French* have some Settlements, are only Branches of the *Niger*.

The principal CURIOSITIES in *Africa* are, the vast *Pyramids* in *Egypt*, three Miles West of *Cairo*, supposed to be built by the Children of *Israel*, when in Bondage, for Sepulchres for the *Egyptian Kings*.—Also, the *Mummy Pits* near the *Pyramids*, in which are found the Bodies of People, embalmed and buried 3000 Years ago, yet perfect and distinct at this Day.

AMERICA is the last Quarter of the World: It lies about 2300 Miles West of *England*, and is of vast Extent. Bounded on the *North* by unknown Parts, by the Atlantic Ocean on the *East*, by the great South Sea on the *South* and *West*. 'Tis 8 or 9 thousand Miles in *Length*, and about 3 thousand in *Breadth*. It was discovered first by *Christopher Columbus*, with a *Spanish* Fleet, in *October* 1492, but more fully by *Americus Vesputius* in 1497, and from him takes its Name. It is often called the *West Indies*, in Contradistinction to the farther Parts of *Asia*, stiled the *East Indies*, discovered by the *Portuguese* a little before; both which Countries were unknown to the *Europeans* till that Time. *Nature* seems to have divided it into two Parts, *North* and *South*, by a narrow Neck of Land, called the *Isthmus of Darien*, or *Panama*, which in some Places is not more than 30 Miles over*.

NORTH AMERICA is divided into these following Parts.

Nations.	Length.	Breadth.	Chief City.	Dist. & Bearing from London.	Diff. of Time from London	Belongs to
Mexico, or New Spain	2000	600	Mexico	4900 N. W.	6 50 aft.	Spain
Granada, or New Mexico	Bounds undetermined.		St. Fee	4320 N. W.	7 0 aft.	Spain
California	Bounds undetermined.		St. Juan			Spain
Florida	480.	360	St. Augustine	3960 W.	5 24 aft.	England
Canada	1800	1260	Quebec	2760 N. W.	4 56 aft.	England
Louisiana	1400	1000	Fort Louis	4080 N. W.	6 4 aft.	England & Spain
British Colonies	1383	300	Boston	2760 W.	4 40 aft.	England

The North Part of the Continent is very little known, and claimed by the *English*. The chief Places are *Rupert's Fort*, in *Estimaux*, or *New Britain*—*Port Nelson* and *Churchill* in *New North Wales*—and *New Severn*, and *Albany*, in *New South Wales*.

The *British* Colonies, or Plantations are, 1. *Nova Scotia*, the chief Town *Halifax*.—2. *New England*, the chief Town *Boston*.—3. *New York*, the chief Town *New York*.—4. *New Jersey*, the chief Town *Elizabeth Town*.—5. *Pensylvania*, the chief Town *Philadelphia*.—6. *Maryland*, the chief Town *Baltimore*.—7. *Virginia*, the chief Town *James Town*.—8. *Carolina*, the chief Town *Charles Town*.—And 9. *Georgia*, whose chief Town is the *Savannah*.

* If this *Isthmus* was cut through to make a safe Passage for Ships into the opposite Seas; and also a like Cut made across the *Isthmus* of *Suez*, at the End of the *Mediterranean*, to open a Communication with the *Red Sea*, vast Advantages would be derived from thence to the Trading World; and the great Voyage round the Globe would become not only much shorter, but safer than at present.

The INDIANS here are generally of a *brown* Complexion; the few that are *white*, stain themselves of a *copper* or *red* Colour, and some with Streaks of *blue*. They are dexterous with their *Bows* and *Arrows*; and very fond of adorning themselves with Strings of *Beads* and *Shells* about their Necks, and *Rings* and *Plates* in their Ears and Noses, and pull their *Beards* up by the Roots. They go *naked* in the Summer, but in the Winter cover themselves with the *Skins* of Beasts taken in hunting, which is their chief Employ. The *Mexicans* are civil and docile, the rest savage and cruel; they *scalp* their Prisoners, and sometimes (it is said) *broil* and *eat* them. They are gross *Idolaters*, and worship the *Sun* and *Stars*.

Note; the *Religion*, *Language*, and *Dress* of the several Colonies in *America*, are the same of the *European Nations* they belong to.

The COMMODITIES here are, *Cotton*, *Silk*, *Skins*, *Furs*, *Feathers*, *Cochineal*, *Logwood*, *Mahogany*, *Tobacco*, *Iron*, *Pine-Apples*, *Sugar*, and several Sorts of *Drugs*.

The chief ISLANDS are, *Newfoundland*, belonging to the *English*, famous for its Fishery.—*Bermudas* or *Summer Isles*, are the Property of *Great Britain*.—*Cape Breton*, *Anticosti*, and *St. John's*, belong to the *English*.—The *Bahama Isles*, (many in Number, but *Providence* only inhabited) belong to the *English*.—The *Antilles*, as *Cuba*, *Hispaniola*, and *Porto Rico*, belong to *Spain*, and *Jamaica* to the *English*.—The *Caribbee Isles*, the chief *St. Christophers*, *Anguila*, *Antigua*, *Barbadoes*, belong to the *English*.—*St. Martin*, *Bartholomew*, *Desèado*, *Guadaloupe*, *Marigalante*, *Martinico*, and *Granada*, belong to the *French*.—*Eustatia* and *Saba* belong to the *Dutch*,—and *St. Thomas* to the *Danes*.—These Islands produce vast Quantities of *Sugar*, (in planting of which *Thousands* of *Negroes* are employed) *Tobacco*, *Pepper*, *Yams*, *Indigo*, *Ginger*, *Gums*, *Dying-woods*, *Cocoa*, *Cotten*, *Parrots*, *Fish*, *Turtles*, and *Lignum Vitæ*.

The chief MOUNTAINS here are, the *Apalachean* between *Carolina* and *Louisiana*. But in the *North* are vast unknown *Mountains* perpetually covered with *Snow*, from whence the Winds blowing the greatest Part of the Year, these Countries become much colder than those in *Europe* in the same Latitude.

The most remarkable RIVERS are, *St. Laurence*, dividing the *English* Plantations from *Canada*.—The *Mississippi*, and the *Ohio*, in *Louisiana*,—and the River *North* in *New Mexico*, both which last empty themselves into the *Gulf of Mexico*.

Things most curious in this Part, are the prodigious *Falls of Water* near *Niagara*: Also the *Cabbage-Tree* 100 Feet high, with no Branches but at the Top.—The *Calabach*, which grows like a large *Gourd*, of which, cut into different Sizes, they make their *Dishes*, *Pails*, &c.—And the *Cassavi Root*, of which the *Indians* usually make their *Bread*.

In SOUTH AMERICA are the following Nations.

Nations	Length	Breadth	Chief City	Dist. & Bearing from London	Diff. of Time from London	Belongs to
Terra Firma	1400	700	Panama	4650 W.	5 28 aft.	Spain
Peru	2000	600	Lima	5520 S. W.	5 4 aft.	Spain
Amazons, a very large Country, but little known to the Europeans, 1200 Long, 960 Broad.						
Guiana	780	480	{ Surinam } { Cayenne }	3840 S. W.	3 44 aft.	Dutch and French
Brasil	2000	700	St. Salvador	6000 S. W.	3 44 aft.	Portugal.
Paraguay	1500	1100	Assumption	5640 S. W.	3 52 aft.	Spain and the Jesuits
Chili	1200	600	St. Jago	6600 S. W.	5 6 aft.	Spain
Terra Magellanica, or Patagonia. } The Spaniards took Possession of it, but did not think it worth while to settle there						

The COMMODITIES of this Country are Gold, (which in *Peru* was once as plenty as Stones in the Street) *Silver*, *Pearls*, *Tobacco*, *Cochineal*, *Emeralds*, *Jaspers*, *Ametists*, *Ebony*, *Cocoa Nuts*, *Pine Apples*, *Brasil Wood*, *Jesuits Bark*, *Amber*, *Rosin*, *Balsam*, *Ostriches Feathers*, *Maize*, and several Sorts of *Gums* and *Drugs*.

The INDIANS are generally of a good Size, and well made: Down to the Tropic of *Capricorn* they are of a *Brown* or *Copper* Complexion, but farther on tolerably fair. They have little Idea of God, or Religion; are very superstitious, and the grossest Idolaters. They have many odd Customs; go for the most part *naked*, but paint themselves of various Colours, red, blue, and yellow; many of them wear large Rings in their Ears, Chains of Shells about their Necks, and glittering Stones or Plates on their Lip and Noses, permitting no Hair to grow upon their Chins. They use *Bows* and *Arrows*, stroll about, and live by Fishing and Hunting, as they do in the *Northern Parts*. Some of the Natives are said to be *Cannibals*, and worship the *Devil*.

The ISLANDS here are, *St. Catherines* and *Trinidad*, off the Coast of *Brasil*—*Chiloe* and *Juan Fernandes*, near *Chili*,—and the large Island *Terra del Fuego*, (so called on Account of its terrible *Volcanoes* or burning Mountains) at the South of *Magellanica*; these all belong to *Spain*.—But *Falkland* Island is claimed by the *English*.—There are many more *Islands* scattered about the Great South Sea, but all uninhabited, and of no great Account.

The chief MOUNTAINS are, *St. Martha* in *Terra Firma*:—The *Andees*, which are said to be the highest in the World:—Their Tops are always covered with Snow; and the Cold is so intense, that Numbers have perished in going over them; and others have lost their Fingers and Toes, and been lamed for ever. No Beast of any Kind is found upon them. They run through the whole Length of *South America*.

The most remarkable RIVERS are, *Oronoko*, in *Terra Firma*, where the South Sea Trade begins;—the vast River *Amazon* in *Amazonia*, and *Rio de la Plata*, or the River Plate, in *Paraguay*.

Of the less-known PARTS of the WORLD.

IN the *North*, near the Pole are, *Nova Zembla—Greenland and Groenland*. The Inhabitants are very few, and these savage, low in Stature, and of an ugly Mien, something resembling a Bear. They live upon the Flesh of *Whales, Bears, Foxes, Rain-deers*, and go muffled up in Skins, the hairy Side next their Bodies. The *Sun* does not appear in these Parts for 3 or 4 Months together in the Winter, and then the *Cold* is sometimes so intense as to freeze Brandy. And in the Summer, he shines as many Months continually upon them, which makes the *Heat* as troublesome. Here also lie—*New Britain—New North Wales—New Denmark, &c.* in *America*—and *Yesso*, and *Kamchatka* in *Asia*, all very little known.

Below the *Molucca Isles* in *Asia* are, *New Guinea—Carpentaria—New Holland—Dieman's Land*—and a little further, *New Zealand*, Regions discovered by the *Dutch* and *English* about the Middle of last Century, or the Beginning of this. Our Knowledge of them is very imperfect; the *Natives* are said to be *wild, savage, black*, and go naked.

'Tis generally believed, that there are many *large Tracts* of Land towards the *South Pole*, which at present we know nothing of, and may be reserved by *Providence* for future Discovery.

Of the TRADE WINDS.

I Cannot conclude without observing the wonderful *Phænomenon* of the *Trade Winds*; I mean, such as always blow from one and the same Quarter of the Globe. They are represented in the Maps by the *Shades* in and about the *Torrid Zone*, and their *Direction* is constantly the Way the little *Arrows* seem directed. In the *Ethiopic, Atlantic, and Pacific* Oceans (to 30 Degrees from the *Equinoctial Line*) they are continually found to blow towards the *West*; but in the Bay of *Bengal, Arabian, Chinese* and *Indian Seas*, the Winds vary, blowing one Half of the Year one Way, and the other the *contrary*; i. e. in the *Summer* they blow to the N. E. but in the *Winter* to the S. W. These are called the *periodical Trade Winds*, and by the Sailors *Monsoons*†. As the *Arrows* point their *Course*, so the Times of *shifting* are denoted by the *Months* thereto annexed. All *Ships* which trade in these Parts are obliged to observe the wonted Seasons; by that Means, they never fail of a *fair Wind* to waft them to the wish'd-for Port, and another to return them to the Haven where they would be.

† At the *Changing* or *Breaking up* of the *Monsoons*, which happens about *March* and *September*, there are dreadful Storms of *Wind, Thunder, and Rain*; which, agitating the *Atmosphere* to great Distances, are perhaps the *Cause* why these Months are so *Windy* in this Part of the World. — From 30 Degrees towards the Poles, the Winds are *variable*, though they blow from the *West* oftener than any other Point.

T H E

EXPLANATION and USE

O F T H E

M A P S.

THE Map of the WORLD, at the Beginning of the Book, represents the Globe, taken out of its Horizon, squeezed flat, cut through, and turned up again. The Hemisphere on the Right Hand contains *Europe, Asia, and Africa*; that on the Left, *North and South America*. The Circles bounding the Projection represent the *Brass Meridian*. The Top and Bottom are the *North and South Poles*; and the *Curve Lines* uniting there, are the other *Meridians* upon the Globe. The *Equator* is the Strait Line running across the *Meridians* exactly in the Middle. The *Tropics* and *Polar Circles* are delineated at their proper Distances on each Side towards the North and South; and the *Ecliptic* is the *Serpentine Line*, one Half of which bends upwards from the Equator to the Tropic of Cancer, and the other Half downwards to the Tropic of Capricorn. If you turn your Eye to the Map, you will find all the *Lines*, and the several *Countries*, described in their proper Distances and Situation, just as upon the Globe itself; and which View will give you a better *Idea* than all the verbal Descriptions in the World.

The other Maps, viz. of *Europe, Asia, Africa*, and of *North and South America*, which are bordered with a *Square*, are only Parts of a larger Projection, in order to exhibit each particular Country, and its contiguous States more *distinct*. The Top is always the *North*; the Bottom the *South*; the Right Hand *East*; the Left Hand *West*; when 'tis otherwise, there is always a *Compass* annexed to point the Contrary. The Lines running from Top to Bottom are *Part* of the *Meridians*; and those from Side to Side are *Parallels* of *Latitude*, which are generally drawn 10 Degrees distant, or 600 Miles asunder from each other.

Maps are used not only to exhibit the true *Shape* of *Countries*, but also, the *Longitude* and *Latitude* of Places, and their *Distances* and *Bearing*, or Situation from one another.

(1st,) To find the LATITUDE of any Place.

Look the Place; then run with a Pencil, or your Finger, to either the Right or Left-hand-side, keeping the same Distance between the Lines above and below it, and the Degree you meet with there, is the *Latitude* required.

Thus, the Latitude of *London* you will find to be about 51 and 1-half, and Latitude of *Dublin* 53 Degrees.

(2d,) To find the LONGITUDE of any Place.

Only run your Pencil or Finger from it, to the Top or Bottom of the Map, and the Degree against it is the Longitude required.

Thus the Longitude of *Rome* is about 13 Degrees to the East; and *Lisbon* about 9 to the West.

(3rd, The LONGITUDE and LATITUDE being given, to find the Place.

Look the Longitude at the Top or Bottom; and the Latitude on the Right or Left-Hand, then run your Fingers across the Map till these two Lines meet, and that is the exact Situation of the Place.

Note; By this Method any Town may be inserted, when the Longitude and Latitude of it are known, and the Place is not in the Map already.

(4th, To find the Difference in TIME between us in *England*, and any other Place; and consequently to know *what o'Clock* it is at any Place in the World.

Having looked the Place; only bring your Finger down to the Bottom of the Map, and there you will find the Difference either before or after us, the Time being figured on the Maps.

Thus at *Constantinople*, the Residence of the Great Turk, it is always 2 Hours before us; but at *Jamaica* in the *West Indies*, the Time is 5 Hours after us.

(5th,) To measure the DISTANCE and POSITION of one Town from another.

If the Places lie under the same Meridian, only count the Number of Degrees between them; these multiplied by 60, gives the *Distance* required.— But if the Places lie in any other Direction, then, with a Pair of *Dividers*, open from one to the other; apply this Opening to the Meridian, which runs equally between them, (remembering to place the Legs equally above and below the Parallels, which run through those Places) then count the Degrees on the Side of the Map, between the two Points of the *Dividers*, which Degrees, multiplied by 60, will give the *Distance*, as before.

The little *Compass* you find inserted will shew how the Places *bear* from each other.

Thus the Distance from *London* to *Vienna* in *Germany* is about 11 Degrees or 660 Miles almost East; and to *Dublin* in *Ireland* is about $4\frac{1}{4}$ Degrees or 255 Miles North West.

(6th,) To find what Nations and People *rise, dine, sup, and go to bed*, at the same Time with one another.

Look into the Map of the World, (at the Beginning of the Book) and observe those Nations, which lie near or under the *same Meridian*; for the Inhabitants of those several Countries are employed in the same Offices of Life at the same Time.

Thus you see the *Scotch, French, Spanish, Moors, and Negroes*, as they are under the same Meridian with the *English*, must, consequently, *rise, dine, sup, and go to bed*, when we do here.

The

The Difference of the M I L E S in several Countries is very great; but it will be useful to remember, That

The *English, Italian, and Turkish*, are nearly the same.

The *Scotch and Irish* Mile is about $1 \frac{1}{2}$ *English*.

The *German, Danish, Dutch, and Polish*, is about 4 *English*.

The *Sweedish* is about 5 *English*.

The *Spanish* is about $3 \frac{1}{2}$ *English*.

The *Hungarian* is about 6 *English*.

The *Russian* is about $\frac{3}{4}$ *English*.

The *Persian, Arabian, and Egyptian*, is about 3 *English*.

The *Indian* is almost 3 *English*.

The *Japan* is about half a Quarter of an *English* Mile.

The *French League* is 2 of our own Miles.

The *English League* is 3 of our own Miles.

Note; If the whole L A N D be supposed to be divided into 100 Parts,

Europe	}	will be about	$\left\{ \begin{array}{l} 12 \\ 27 \\ 26 \\ 35 \end{array} \right\}$	of those Parts.
Asia				
Africa				
America				

Note also, the R E L I G I O N S in the World are four.—*Pagans—Jews—Christians—and Mahometans*, which have some little Differences and Distinctions among themselves.

If we suppose all the I N H A B I T A N T S on the Earth to be divided into 30 equal Parts,

The Pagans	}	will be about	$\left\{ \begin{array}{l} 18 \\ 1 \\ 5 \\ 6 \end{array} \right\}$	of those Parts.
The Jews				
The Christians				
The Mahometans				

The Number of *Inhabitants* computed at present to be in the *known World* at a *Medium*, taken from the best Calculations, are about 953 *Millions*.

<i>Europe</i>	contains	—	153	} Millions
<i>Asia</i>	—	—	500	
<i>Africa</i>	—	—	150	
<i>America</i>	—	—	150	

Total 953 Millions.

A

DESCRIPTION

OF

Commodore ANSON's Voyage
round the WORLD.

THE *English* foreseeing a *War* would unavoidably happen with *Spain*, the *Government* came to a Resolution of sending a *Squadron* of Ships into the *South Seas* to make Reprisals on the *Spaniards* in that Part of the World. Accordingly *Commodore Anson*, having received Orders for that Expedition, set sail in the *Centurion*, with six or seven Ships more from *Portsmouth*, the 88th of *September* 1740; but meeting with contrary Winds, did not arrive at *Madeira* till 40 Days after; viz. *October* 25.—This is a small Island belonging to the *Portuguese*, and is famous for its excellent *Wine**.

On the 3d of *November* he left the *Madeiras* bound for *St. Catherine's*, a small Island on the Coast of *Brasil* in *South America*, where (by the Benefit of the *Trade Winds*, after crossing the *Equinoctial Line* the 28th of *November*) he came safe to an Anchor on the 18th of *December*.

Staying here to refresh the *Crew*, and refit his *Ships*, till the 18th of *January*, he set sail, and pursued his Voyage to the *Bay* of *St. Julian* on the Coast of *Magellanica*, where he anchored the 1st of *February*.—This is a large, wild, and desolate Country, claimed by the *Spaniards*, but they have made no Settlements in it. The *Natives* are represented as *Giants*.

The *Commodore* weighed Anchor at *St. Julian* the 27th of *February*, proposing to attack *Baldivia*, a principal Port of the *Spaniards*, on the opposite Side of the Continent in *Chili*; but meeting with dreadful Storms, which separated his *Fleet* in passing round *Cape Horn*, he was obliged to steer directly for *Juan Fernandes*, an uninhabited Island about 110 Leagues from the Coast of *Chili*; where he did not arrive till the 9th of *June*, 1741.—This Island abounds in beautiful *Lawns*, fine *Pasturages*, &c. and is the Property of *Spain*.

Having continued here upwards of three Months with a View of recovering his Men, who were most of them ill with the *Scurvy*, as well as for the separated Ships to rejoin him; on the 19th of *September* he left *Juan Fernandes*; and after taking several small Prizes on the Coast of *Chili*, arrived at *Paita*, a large Sea-port in *Peru* near the *Equinoctial*, which he took, plundered, and burnt.

* In the Map at the Beginning of the Book is delineated the Tract which *Commodore Anson's* Ship took in sailing round the World.

From hence, the *Squadron* sailed away on the 16th of *November*, and reached the Island *Quibo*, near *Panama*, on the 3rd of *December*: And, having taken in *Wood* and *Water*, left it the 9th of *December*. The next Day he took a small Prize, and then sailed for the Coast of *Mexico*, to cruise off the Port of *Accapulco*, in Hopes of taking a rich *Galleon*, belonging to the *Spaniards*, which usually sails early in the Spring from thence to *Manilla*, one of the *Phillipian Isles* in *Asia*.

The Governor of *Accapulco* getting Intelligence of the *English* being upon their Coast, deferred the sailing of that Ship till the Year following: On which Disappointment, the Commodore steered away to *Chequetan*, a Port farther *North*; and having taken in fresh *Water*, &c. departed from the Coast of *Mexico* the 6th of *May* 1742 for *China*. But meeting with great Distresses in his long Voyage over the vast *Pacific Ocean*, was obliged to get to the first Land. On the 27th of *August* they made the *Ladrone Isles*, and in a Day or two more got into *Tinian*, one of the most pleasant; which, though uninhabited, was found full of *Cattle*, *Fruits*, and *Game*. These *Isles* belong to *Spain*.

Here Mr. *Anson* met with Distresses greater than any he had encountered before: For, on the 22d of *September*, a violent *Storm* of *Wind* arising, his Ship was driven from its *Anchor*, and forced to Sea, leaving himself and the greater Part of his Men on Shore; who concluded that the Ship would be inevitably lost, and all on Board perish. But whilst they were contriving a Method to escape if possible, the Ship, to their inexpressible Joy, returned on the 11th of *October*, after having been absent 19 Days, and all the Hands in the greatest Distress.—The Commodore having recovered his Ship, and sufficiently refreshed his Men, departed from *Tinian* the 21st of *October*; and passing between the Islands *Formosa* and *Luconia*, made the Coast of *China* the 5th of *November*; and on the 12th anchored at the little Island *Macao*, belonging to the *Portuguese*, near *Canton*.

Mr. *Anson* having here new-rigged his Ship and got in fresh *Stores*, weighed Anchor the 19th of *April* 1743, and stood to Sea; where he soon came to a Resolution of steering back and cruising off the *Phillippian Isles* for the *Manilla* Ship, which was to have sailed from *Accapulco* to these Parts the Year before. Where plying till the 1st of *July*, the *Colours* of the long expected Ship appeared in View; which they soon came up with, and after a smart Engagement took. The Commodore returned with his Prize to *Canton*, and on the 11th of *July* came to an Anchor off *Macao* again.—This Ship and Cargo proved to be worth almost a *Million* of Money.

Having finished his Affairs at *Canton*, and sold his Prize, the Commodore set sail the 15th of *December*, and on the 3d of *January* came to an Anchor in the Straights of *Sunda*; where he continued to take in *Wood* and *Water*, till the 8th, then standing for the *Cape of Good Hope*, the most Southern Part of *Africa*, anchored in *Table Bay* the 11th of *March*. The Settlements here belong to the *Dutch*.

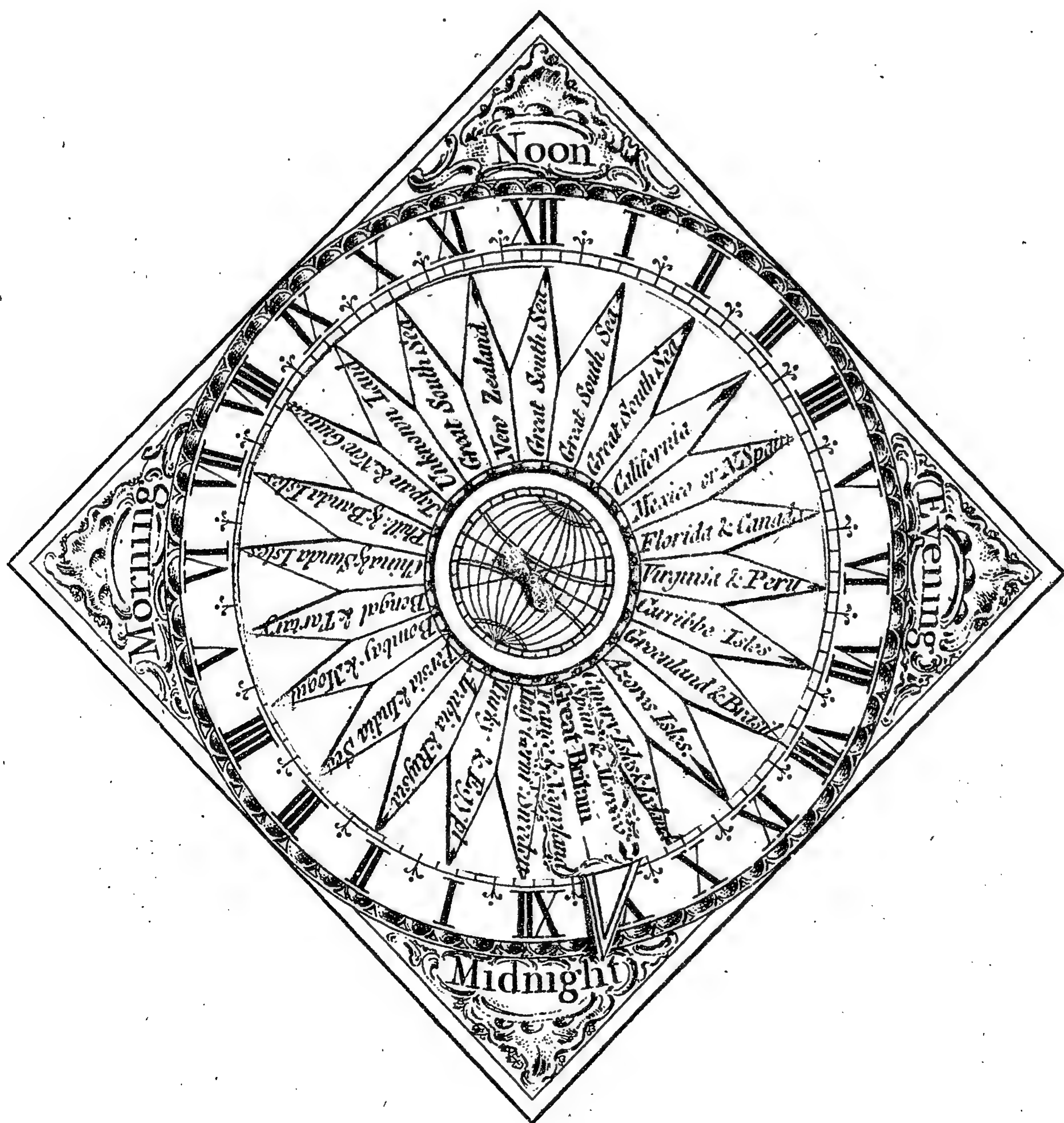
On

On the 3rd of *April* 1744, his Business being completed at the *Cape*, he put to *Sea* again. On the 19th was in Sight of the Island *St. Helens*, but did not touch there. The 10th of *June* he spoke with an *English* Ship bound to *Philadelphia*, which gave him Intelligence of a *War* with *France*. This greatly alarmed him; but bearing up with his usual *Intrepidity*, he steered clear of the *French Fleet*, which was then at *Sea*, and on the 15th of the same Month arrived safe to an *Anchor* at *Portsmouth*, to the great *Joy* of the whole *Crew*, as well as their Friends; after an Absence of almost four Years,—and having *lost one Day* in his *Reckoning**.

* This is easy to be accounted for: For, if a Man travel the same Way with the *Sun*, he will lengthen his Day a little; i. e. he will find it to be something longer than it would have been, had he staid at the Place he came from. This small Addition being made to each Day of his *Tour* round the *Globe*, will amount in all to 1 whole Day: Consequently he must reckon, on his Return, 1 Day less, than they do, who have continued still at the same Place. For it is evident,—that the *Sun* must have gone *once* more by them, than by him, who journeyed round the Earth with it.——See more at Paradox 4th.

THE
EXPLANATION and USE
OF THE
GEOGRAPHICAL CLOCK.

THE outer Circle, which is fixed, and divided into twice XII. represents the 24 Hours of Day and Night: The moveable Circle within has the Capital Kingdoms and Nations of the Earth inscribed according to their Longitude; or Difference in Time from each other. The Top is always *Noon*; the Bottom *Midnight*; the Left-hand Side is *Morning*; the Right-hand *Evening*; as the Figure itself points out. Some of the many Uses of this little *Machine* are as under.

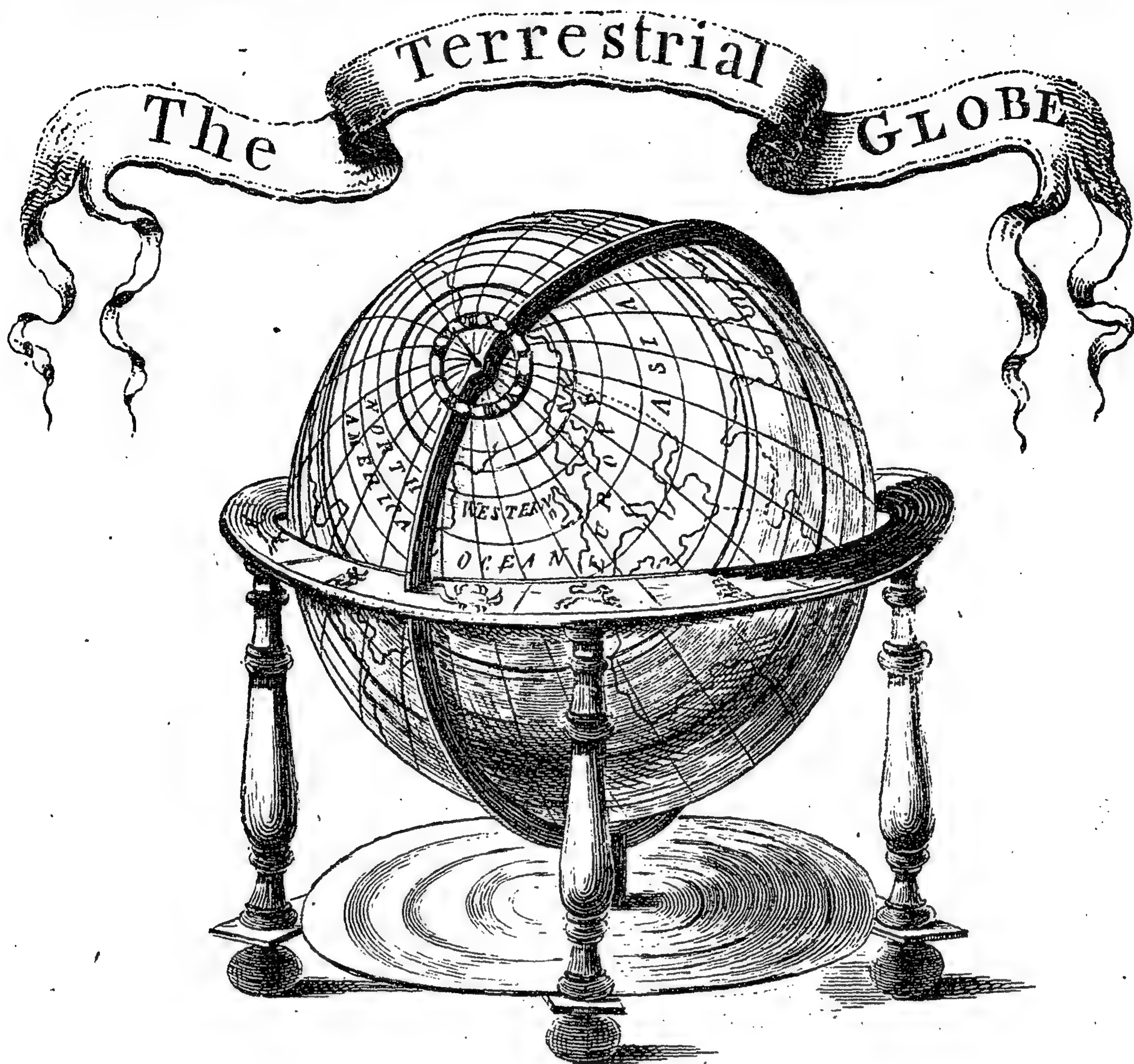


Bring *Great Britain* to the Hour on the outer Circle, that it is by your Watch; then against the several Countries inserted in the moveable Circle, you have the Time of *Day* or *Night* at those Places at one View.

Thus, when it is 10 in the *Morning* with us in *Britain*—it is almost 10 at the Courts of *Spain* and *Morocco*;—a little *past* 10 at *France* and *Negroland*;—about 11 through *Italy*, *Germany*, and *Sweden*.—Noon at the Residence of the *Great Turk*, and with the *Egyptians*, &c.—3 in the *Afternoon* at our Settlements at *Bombay* and the *Moguls*;—5 at *China*;—10 at *Night* at *New Zeland*, which are nearly our *Antipodes*.—Midnight to those sailing in the *Great South Sea*;—3 in the *Morning* at *Mexico* or *New Spain*;—5 at *Virginia* and *Peru*;—7 at *Greenland* and the *Brasil*s;—and 9 at the *Canary Isles* and *Iceland*.

Hence also, at one View, you may see at every Hour of the Day how the whole World is engaged, and what the several Inhabitants are supposed to be employed in.—You may see where they are *Rising*,—where *Breakfasting*;—*Dining*;—*Drinking Tea*;—where going to *Supper*, or *Assemblies*;—and where to *Bed**.

* This is grounded upon a Supposition, that 5 or 6 o'Clock in the Morning may be taken for the Time of *Rising*;—9 for *Breakfasting*;—12 and 1 for *Dining*;—5 for *Drinking Tea*;—8 for *Supping*;—and 10 for going to *Bed*.

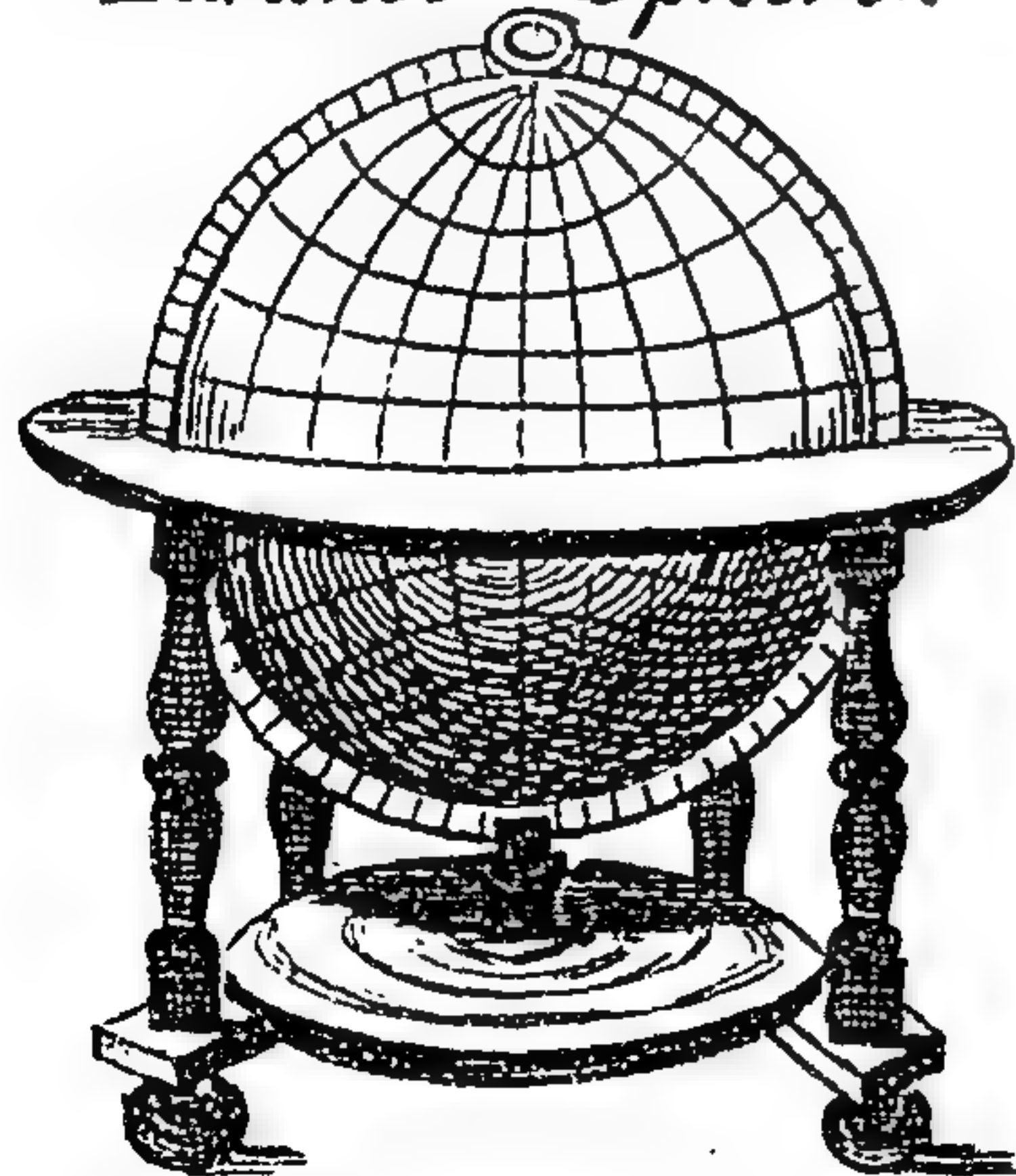


*E'er half the SCHOOL Authors be Read it will be seasonable for YOUTH to learn
the Use of the GLOBES.*

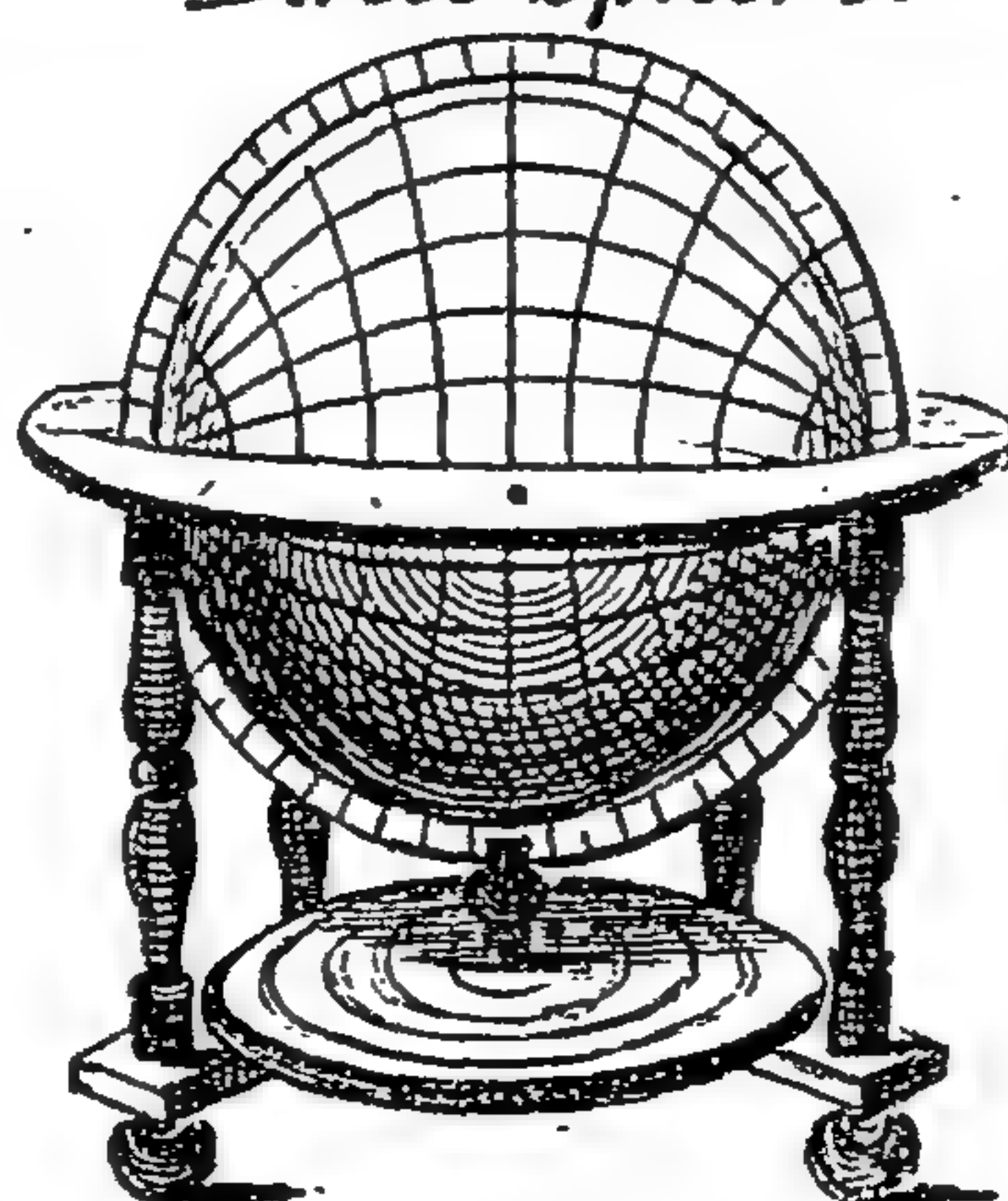
MILTON on Education.

The GLOBE or Sphere in its Three Different Positions.

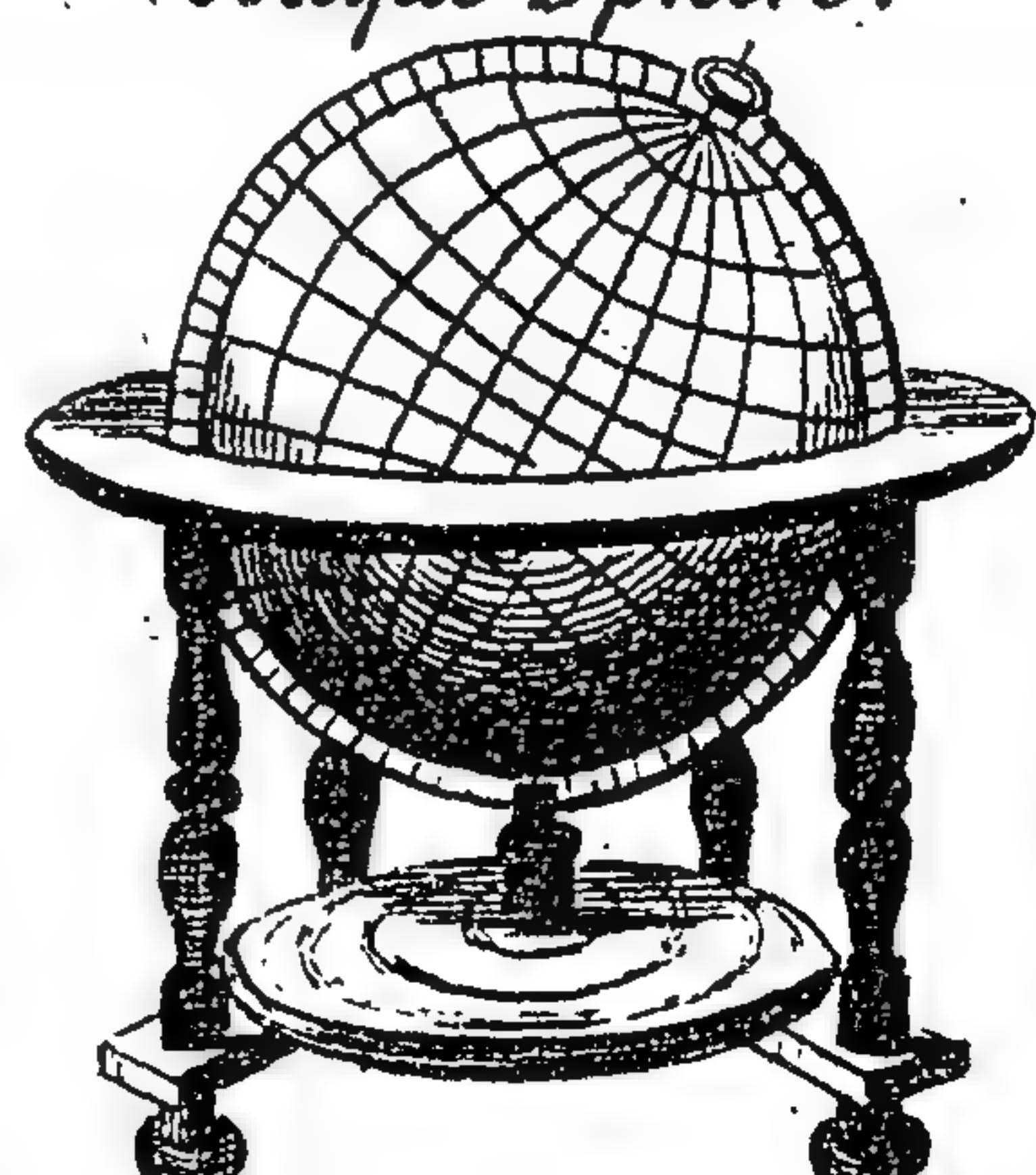
Parallel Sphere.



Direct Sphere.



Oblique Sphere.



J. Gibson Sculp.

*Globes of any size from 3. to 28. Inches Diameter are to be had of M^r N HILL opposite Serjeants Inn
Chancery Lane London. elegantly fitted up for Gentlemen & Ladies at the most Reasonable PRICE.*

T H E
DESCRIPTION and USE
OF THE
TERRESTRIAL GLOBE.

THE *Terrestrial Globe* is an artificial *Sphere*, or round *Ball*, upon whose Surface are exactly delineated the chief *Kingdoms*, *Nations*, and *Cities* on the Earth, in their proper *Situations* and *Distances*, just as they are in *Nature*.

This curious *Instrument* consists of several Parts.

(1.) The 2 *Poles* (being the Ends of the Axis, on which the Globe turns to perform the Diurnal Motions) representing those of the World: The Upper is the *North Pole*, and the Lower the *South Pole*.

(2.) The *Brass Meridian* divided into 4 Quarters, and each Quarter into 90 Degrees: The upper Part is graduated from the Equator towards the Poles; but the lower Part from the Poles towards the Equator. This Circle surrounds the Globe, and is conjoined to it at the Poles themselves.

(3.) The *Wooden Horizon*, or *Frame*, which supports the whole Globe; the upper Part of it represents our *true Horizon*, and has several Circles drawn upon it.—The first, next the Globe, contains the 12 *Signs* of the *Zodiac*, through which the Sun or Earth revolves in a Year; these are subdivided into single Degrees.—The next Circle exhibits the *Julian*, and the third the *Gregorian Kalendar* (or *Old Stile* and *New Stile*) divided into *Months* and *Days*.—On the outside of these are generally delineated the 32 *Points* of the *Compass*.

(4.) The *Hour Circle*, divided into twice 12 Hours, fitted to the Meridian round the North Pole; which Pole carries a little *Index* pointing to the Hour.

(5.) A thin Slip of Brass called a *Quadrant of Altitude*, divided into 90 Degrees, the same Size with those on the Equinoctial, to be fastened occasionally to the *Top* of the Meridian, in order to measure the *Distances* and *Directions* of Places from each other.

(Lastly,)

(Lastly,) On the *Surface* of the Globe are also delineated the *Equinoctial* Line divided into 180 Degrees each Way from the first, or chief Meridian : —The *Ecliptic* * divided into the 12 Signs, and each Sign into 30 Degrees; —the *Tropics* of Cancer and Capricorn; —the 2 *Polar* Circles; —and the 24 *Meridians*, corresponding to the 24 Hours of the Day and Night.

The USE of this curious *Mathematical* Instrument, is to point out the various *Phænomena* belonging to the different *Nations* and *Inhabitants* of the World, with Reference to their *Distance*, *Position*, *Varieties of Days* and *Nights*, *Changes* and *Revolutions* of the *Seasons*, in an easy and natural Manner, without the Trouble of long and tedious Calculations.

* The *Ecliptic Line* represents that Path in the Heavens, which the Sun seems to describe by the Earth's annually revolving round it. It is divided into 12 equal Parts, and each of those into 30 more, corresponding to the 12 Months and the Days of the Months. The *Names* and *Characters* of the 12 Signs, with the Time of the *Sun's Entrance* into each, is as follows.

<i>Aries</i>	<i>Taurus</i>	<i>Gemini</i>	<i>Cancer</i>	<i>Leo</i>	<i>Virgo</i>	<i>Libra</i>	<i>Scorpio</i>	<i>Sagittarius</i>	<i>Capricornus</i>	<i>Aquarius</i>	<i>Pisces</i> .
♈	♉	♊	♋	♌	♍	♎	♏	♐	♑	♒	♓
Mar. 20.	Apr. 20.	May 21.	June 22.	July 23.	Aug. 23.	Sept. 23.	Oct. 24.	Nov. 22.	Dec. 22.	Jan. 20.	Feb. 19.

The most USEFUL PROBLEMS are these, which follow.

PROBLEM I. To find the *Latitude* of any Place.

Only bring the Place to the graduated Side of the *Brass Meridian*, and the Figure that stands over it shews its *Latitude*, or Distance from the Equinoctial.

	Degrees.
Thus the Latitude of <i>London</i> is—	51 and $\frac{1}{2}$ <i>North</i> .
<i>Jerusalem</i> is—	32— <i>North</i> .
and the <i>Cape of Good Hope</i> —	34 and $\frac{1}{2}$ <i>South</i> .

Note, If a Place lies on the North Side of the Equinoctial Line, it has *North Latitude*; but if on the South Side, it has *South Latitude*.

Note, The Latitude of a Place can never be more than 90 Degrees either *North* or *South*,—that being the greatest Distance of the Poles (on each Side the Globe) from the Equinoctial Line.

PROBLEM II. To find the *Longitude* of any Place.

Bring the Place to the *Brass Meridian*; then observe the Degree the Meridian cuts on the Equinoctial, and that is its *Longitude*, or Distance in Degrees either *Eastward* or *Westward*, from the *first Meridian*; which, in some Globes, begins at *Ferro*, in others at *Teneriff*, but on the new ones, at *London*.

	Degrees.
Thus the Longitude of <i>Mecca</i> in <i>Arabia</i> is—	43 $\frac{1}{2}$ <i>East</i> }
And the Longitude of <i>Port Royal</i> in <i>Jamaica</i> is 77	<i>West</i> } from <i>London</i> .

Note, The *Longitude* of a Place can never be more than 180 Degrees either *East* or *West*: Because that Distance brings you to the opposite Part of the Meridian, which is the farthest any Place can possibly be from us.

PROBLEM III. To *rectify* the Globe, (i. e.) to place it in such a particular Situation as is necessary for the Solution of many of the following Problems.

Having turned the graduated Side of the Meridian towards you, move it higher or lower till the Pole stands as many Degrees above the Horizon as the Latitude of the Place is, you would rectify for. Thus, if the Place be *London*, you must raise the Pole 51 $\frac{1}{2}$ Degrees, (because that is the Latitude of it) which brings that City to the Top or Zenith of the Globe, and over the Center of the Horizon; then turn the *North Pole* of the Instrument to the North Part of the World, which may be done by Means of a little Compass, and the Globe will represent the natural Situation of the Earth itself.—

Note, In all Problems relating to *North Latitude*, you must elevate the *North Pole*; but in those that have *South Latitude*, you must raise the *South Pole*.—

The *North Pole* must always incline to that Part of the Horizon marked *June*; and the *South Pole* to that marked *December**.

* Note; The Globe, with Respect to the Horizon, may be placed in three different Positions, whence come the Distinctions of a *Right*, *Oblique*, and *Parallel Sphere*, as represented in the Plate of

PROBLEM IV. The *Longitude* and *Latitude* of a Place being given, to find it upon the Globe.

Only bring the Degree of *Longitude* found on the Equator to the Meridian; then under the Degree of *Latitude* is the Place required.

Thus, suppose an *English Privater* falls in with a *French Ship* in 36 Degrees 20 Minutes *North Latitude*, and 32 Degrees *Longitude West* from *London*; you will find it to be in the Middle of the vast *Atlantic Ocean*, a little South of the *Azore Isles*.

PROBLEM V. To find the *Sun's Place* in the *Ecliptic*.

Look the Day of the Month in the outer Calendar upon the Horizon, (if the Globe was made before the Alteration of the *Stile*) and opposite to it, you will find the *Sign* and *Degree* the Sun is in that Day.—Thus on the 25th of *March*, the Sun's Place is $4\frac{1}{2}$ Degrees in *Aries*.—Then look for that *Sign* and *Degree* upon the *Ecliptic Line* marked on the Globe, and there fix on a small black Patch, so is it prepared for the Solution of the following Problems.

Note; The *Earth's Place* is always in the *Sign* and *Degree opposite* the *Sun*; thus when the Sun is $4\frac{1}{2}$ Degrees in *Aries*, the *Earth* is $4\frac{1}{2}$ Degrees in *Libra*; and so of any other.

PROBLEM VI. To find the Sun's *Declination*; that is, his Distance from the *Equinoctial Line* either *Northward* or *Southward*.

Bring his Place to the Edge of the Meridian; observe what Degree of the Meridian lies over it, and that is his *Declination*.—If the Sun is on the *North Side* the Line, he is said to have *North Declination*; but if on the *South Side*, he has *South Declination*.

Thus on the 20th of *April* the Sun has $11\frac{1}{2}$ Degrees *North Declination*, but on the 26th of *October*, he has $12\frac{1}{2}$ *South Declination*.

Note; The greatest *Declination* can never be more than $23\frac{1}{2}$ Degrees either *North* or *South*.—That being the greatest Distance of the *Tropics* from the *Equinoctial*, and beyond which the Sun never goes.

of the Globe.—The *Sphere* is *Direct* or *Right* when the Poles of the World are in the Horizon, and the Equator passes through the Zenith. People, who live in this Sphere, are said to live under the Line, (as they do in many Places in *Africa*, *East Indies*, and *America*) their Days and Nights are always equal; the Sun is over their Heads twice a year; and all the Stars in both Hemispheres are visible in different Parts of the Year.—A *Parallel Sphere* has the Poles of the World in the Zenith, and the Equator in the Horizon. In this Position, one Half of the *Ecliptic* is above the Horizon, and the other Half below it. Consequently, those who live at the Poles, (if any such) have one Half of the Year Day, the other Half Night; with a Twilight, that continues about two Months. They never see but one Half of the Heavens, which is continually revolving round them.—An *Oblique Sphere* is that, which has the Poles of the World inclined between the *Horizon* and *Zenith*. In this Situation all the Circles on the Globe are cut unequally by the Horizon, except the Equator. All the People in the World, except those who inhabit at the Equator and the Poles, have this Position. The Days and Nights are always *unequal*, unless at the Times of the *Equinoxes* in *March* and *September*. The Increase of this Inequality, as well as of the Twilight, becomes more sensible the nearer they approach the Poles.—The Height of the Pole above the Horizon (in Degrees) is ever equal to the *Latitude* of that Place, or Distance of it from the *Equinoctial*.

PROBLEM

PROBLEM VII. To find where the Sun is *Vertical* on any Day:—That is, to find over whose *Heads* the Sun will pass that Day.

Bring the Sun's Place to the Meridian, observe his Declination, or hold a Pen or Wire over it, then turn the Globe round, and all those Countries which pass under the Wire will have the Sun over their Heads that Day at *Noon*.

Thus on the 16th of *April* the Inhabitants of the North Parts of *Terra Firma*, *Porto Bello*, *Philippian Isles*, Southern Parts of *India*, *Abyssinia*, *Ethiopia*, and *Guinea*, have the Sun over their *Heads* that Day at 12 o'Clock.

Note, This *Appearance* can only happen to those, who live in the *Torrid Zone*, because the Sun never *strays* farther from the Equinoctial, either Northward or Southward, than to the two Tropicks from whence he returns again.

PROBLEM VIII. To find over whose *Heads* the Sun is at any given *Hour*.

Bring the Place where you are (suppose at *London*) to the Meridian; set the Index to the given Hour by your Watch, then turn the Globe till the Index points to the upper 12, or *Noon*, look under the Degree of Declination for that Day, and that is the Place to which the Sun is Vertical, or over its Head at that Time.

Thus on the 13th of *May*, a little past 5 in the Afternoon at *London*, I find the Sun is then over the *Heads* of those who live at *Port Royal* in *Jamaica* in the *West-Indies*.

Note; If it be Morning, the Globe must be turned from East to West: If in the Afternoon, it must be turned from West to East.

PROBLEM IX. To find, at any Hour of the Day, what o'Clock it is at any Place in the World.

Bring the Place where you are to the Brass Meridian; set the Index to the Hour by your Watch, turn the Globe till the Place you are looking for comes under the Meridian, and the Index will point out the Time there required.

Thus when it is 6 o'Clock in the Evening at *England*—'tis half an Hour past 8 at Night at *Jerusalem*.—Almost *Midnight* at the Palace of the *Great Moguls*.—2 in the *Morning* at *Pekin*.—7 in the Middle of the *Great South Sea*;—and *Noon* at *Florida*, *Canada*, and the *Isthmus of Panama*.

Note; By this Problem you may likewise see, at one View, in distant Countries, where the Inhabitants are *Rising*—where *Breakfasting*—*Dining*—*Drinking Tea*; where going to *Assemblies*,—and *where to Bed*.

The Sun's *Longitude*, *Right* and *Oblique Ascension*, *Azimuth*, &c. is considered and explained in the Use of the *Celestial Globe*, annexed to my *New System of Modern Astronomy*.

PROBLEM X. To find at what Hour the Sun *rises* and *sets* any Day in the Year; and also upon what Point of the *Compass*.

Rectify the Globe for the Latitude of the Place you are in; bring the Sun's Place to the Meridian, and set the Index to 12; then turn the Sun's Place to the *Eastern* Edge of the Horizon, and the Index will point out the Hour of *rising*; if you bring it to the *Western* Edge of the Horizon, the Index will shew the *setting*.

Thus on the 16th Day of *March*, the Sun rose a little past 6, and set a little before 6.

Note; In the Summer the Sun rises and sets a little to the *Northward* of the East and West Points, but in Winter, a little to the *Southward* of them. If therefore, when the Sun's Place is brought to the Eastern and Western Edges of the Horizon, you look on the inner Circle right against the little Patch, you will see the *Point of the Compass* upon which the Sun rises and sets that Day.

PROBLEM XI. To find the *Length* of the *Day* and *Night* at any Time of the Year.

Only *double* the Time of the Sun's *rising* that Day, and it gives the Length of the *Night*; *double* the Time of his *setting*, and it gives the Length of the *Day*.

This Problem shews how long the Sun stays with us any Day, and how long he is absent from us any Night.

Thus on 26th of *May* the Sun rises about 4 and sets about 8; therefore the *Day* is 16 Hours long; and the *Night* 8.

PROBLEM XII. To find the Length of the *longest* or *shortest* Day at any Place upon the Earth.

Rectify the Globe for that Place, bring the Beginning of *Cancer* to the Meridian; set the Index to 12, then bring the same Degree of *Cancer* to the *East* Part of the Horizon, and the *Index* will shew the Time of the Sun's *Rising*.

If the same Degree be brought to the *Western* Side, the Index will shew the *Setting*, which *doubled* (as in the last Problem) will give the Length of the *longest* Day and *shortest* Night.

If we bring the Beginning of *Capricorn* to the Meridian, and proceed in all respects as before, we shall have the Length of the *longest* Night and *shortest* Day.

Thus in the great *Mogul's Dominions*, the *longest* Day is 14 Hours; and the *shortest* Night 10 Hours. The *shortest* Day is 10 Hours, and the *longest* Night 14 Hours.

At *Petersburgh*, the Seat of the Empress of *Russia*, the longest Day is about $19\frac{1}{2}$ Hours; and the shortest Night $4\frac{1}{2}$ Hours. Shortest Day $4\frac{1}{2}$ Hours, and longest Night $19\frac{1}{2}$ Hours.

Note; In all Places near the *Equator*—the Sun rises and sets at 6 the Year round.—From thence to the *Polar Circles*, the Days increase as the Latitude increases; so that at those Circles themselves, the longest Day is 24 Hours, and the longest Night just the same.—From the *Polar Circles* to the *Poles*, the Days continue to lengthen into Weeks and Months; so that at the very Pole, the Sun shines for 6 Months together in *Summer*, and is absent from it 6 Months in *Winter*:—*Note*; That when it is Summer with the Northern Inhabitants, 'tis Winter with the Southern, and the contrary; and every Part of the World partakes of an equal Share of Light and Darkness.

PROBLEM XIII. To find all those Inhabitants to whom the Sun is this Moment *rising* or *setting*, in their *Meridian* or *Midnight*.

Find the Sun's Place in the *Ecliptic*, and raise the Pole as much above the Horizon as the Sun (that Day) declines from the *Equator*; then bring the Place where the Sun is Vertical at that Hour to the Brass Meridian; so will it then be in the *Zenith* or Center of the Horizon. Now see what Countries lie on the *Western* Edge of the Horizon; for in them the Sun is *rising*;—to those on the *Eastern* Side he is *setting*;—to those under the upper Part of the Meridian 'tis *Noon Day*:—and to those under the lower Part of it, it is *Midnight*.

Thus on the 25th of *April* at 6 o'Clock in the Evening at *Worcester*.

The Sun is <i>rising</i> at	{ <i>New Zeland</i> ; and to those, who are sailing in the Middle of the <i>Great South Sea</i> .
The Sun is <i>setting</i> at	{ <i>Sweden, Hungary, Italy, Tunis</i> , in the Middle of <i>Negroland</i> , and <i>Guinea</i> .
In the <i>Meridian</i> (or <i>Noon</i>) at	{ the Middle of <i>Mexico</i> ; Bay of <i>Honduras</i> , Mid- dle of <i>Florida, Canada</i> , &c.
Midnight at	{ the Middle of <i>Tartary, Bengal, India</i> , and the Seas near the <i>Sunda Isles</i> .

PROBLEM XIV. To find the Beginning and End of *Twilight*.

The *Twilight* is that faint Light, which opens the Morning by little and little in the East, before the Sun rises; and gradually shuts in the Evening in the West, after the Sun is set. It raises from the Sun's illuminating the upper Part of the *Atmosphere*, and begins always when he approaches within 18 Degrees of the Eastern Part of the Horizon, and ends when he descends 18 Degrees below the Western; when dark Night commences, and continues till Day breaks again.

To find the *Beginning of Twilight*—Rectify the Globe: Turn the Degree of the *Ecliptic*, which is opposite to the Sun's Place, till it is elevated 18 Degrees in the *Quadrant of Altitude* above the Horizon on the *West*, so will the Index point the Hour Twilight begins.

To find when it *ends*—Bring the same Degree of the Ecliptic to 18 Degrees of the Quadrant on the East Side, and the Index will point the Time Twilight *ends*.

Thus on *May* 16 at *London*, Twilight begins a little after 1 in the Morning; and ends a little before 11 at Night.—In these Parts we have no total Night, but a constant Twilight from the 20th of *May* to the 20th of *July* following, which is about 2 Months.—

Note; The Reason we use the Place opposite the Sun in this Problem, and raise it *above* the Horizon, is, because the Quadrant of Altitude is not long enough, nor graduated to 18 Degrees below the Horizon.

PROBLEM XV. To measure the *Distance* from one Town to another.

Only take their Distance with a Pair of Dividers, and apply it to the Equinoctial, that will give the Number of Degrees between them, which being multiplied by 60, (the Number of *Geographical* or *computed Miles* in one Degree) gives the exact Distance sought:—Or, extend the Quadrant of Altitude from one Place to the other, that will shew the Number of Degrees in like Manner, which may be reduced to Miles as before.

Thus the Distance from *London* to *Madrid* is $11\frac{1}{2}$ Degrees. From *Paris* to *Constantinople* $19\frac{1}{2}$ Degrees. From *Bristol* to *Boston* in *New England* 45. Deg.
which multiplied by 60

—
gives computed Miles 2700

Note; No Place can be further from another than 180 Degrees—that being half the Circumference of the Globe, and consequently the greatest Distance.

PROBLEM XVI. To find the *Position*, or upon what *Point of the Compass* one Town or Country bears from another.

Rectify the Globe to the Latitude of one of the Places, and bring it to the Meridian; then extend the Quadrant of Altitude (it being fixed over that Place) to the other, and the End will point upon the Horizon the Position, and thereby shew in what Part of the World it lies directly from the other.

Thus, suppose it was required to know the Position of *Rome* from *London*. —The Globe being rectified, *London* brought to the Meridian, and the Edge of the Quadrant of Altitude laid to *Rome*, you will find the End fall against that Part of the Horizon marked S. E. At the same Time you will see, (as in the last Problem) that the Distance is about 13 Degrees, or 780 Miles. So that a *Bomb* thrown from hence, 780 Miles upon the *South East Point*, would fall exactly at *Rome*, and put the Inhabitants there in great Consternation.

PROBLEM XVII. To find all those Countries in which an *Eclipse* of the *Sun* or *Moon* will be visible.

1. Of *the Sun* : Find the Place to which the Sun is *vertical* at the Time of the *Eclipse* by Problem 7th, and bring it to the *Zenith*, or Top of the Globe; then, to all those Places above the Horizon, if the *Eclipse* be *large*, will the Sun appear (Part of it) visibly obscured.

2. Of *the Moon* : Bring the *Antipodes*, or Country opposite * to the Place where the Sun is *vertical* at the Time of the *Eclipse*, to the *Zenith* or Top of the Globe, and then the *Eclipse* will be seen in *all* Places above the Horizon at that Time.

PROBLEM XVIII. To find the *Distance* of any Place in whose *Zenith* the *Sun*, *Moon*, or any *Star* or *Comet* is at that Time.

Take the *Sun's*, *Star's*, or *Comet's* Altitude with a Quadrant in Degrees, subtract it from 90; the Remainder gives the Distance of the Sun or Comet from your own *Zenith*; which multiply by 60, the Product will give the Miles between you and the Place in whose *Zenith* the Sun or Comet is at that Time.

Thus, suppose the Height of the Sun, on any Day, is about 37 Degrees; then 37 subtracted from 90, leaves 53 for its Distance from you; which multiply by 60, gives 3180; and so many *computed Miles* it is to the Place over which the Sun is at that Time.—*Note*; The Sun itself will point the Way to it.

PROBLEM XIX. To calculate the *Circumference of the Earth* (that is) to find how many Miles it is *round*.

A Line going round our Globe, is supposed by Mathematicians to be divided into 360 equal Parts, called Degrees; and each of those Parts are supposed to be divided into 60 other equal Parts, called Minutes. Now our Countryman, Mr. *Norwood*, found, by accurately measuring from *London* to *York* in 1635, that one Degree upon the Earth's Surface contained $69\frac{1}{2}$ *Statute Miles*; consequently if the whole 360 Degrees be multiplied by $69\frac{1}{2}$, or 70, which is near enough, we shall find the Circuit of the whole Earth, in measured Miles, to be 25,200.

Note; 60 computed Miles make a Degree, which makes the Circumference to be but 21,600 Miles.

* *Note*; The Reason for bringing the *Place opposite* the Sun to the Top of the Globe is, because the Moon is always in that Position when she is *eclipsed*.

PROBLEM XX. To calculate the *Diameter* of the Earth, (i. e.) to find how many Miles it is *through*.

It has been found by accurate Mensuration, that if a Circle measures 22 round, its Diameter will be exactly 7: i. e. the Diameter is always a little less than one-third Part of the Circumference; and this always holds true, be the Circle bigger or less,——Therefore if we multiply the Circumference of the Earth by 7, and divide the Product by 22, the Quotient will give the *Diameter*, or Thickness; and which, in this Case, will be found to be 8018 *measured*, or 6872 *computed* Miles.*.

* *Note*, From these Dimensions of the Earth we may discover that——

(1st.) If there were a Hole made through it, and a *Millstone* let fall into this Hole, and should descend at the Rate of 1 Mile *per Minute*, it be more than $2\frac{3}{4}$ Days in coming to the Center; and being there, would remain suspended.

(2d.) If a *Man* be desirous of traveling round the Earth, and should go 20 Miles each Day, he would be 3 Years and $\frac{1}{2}$ in completing the Journey.

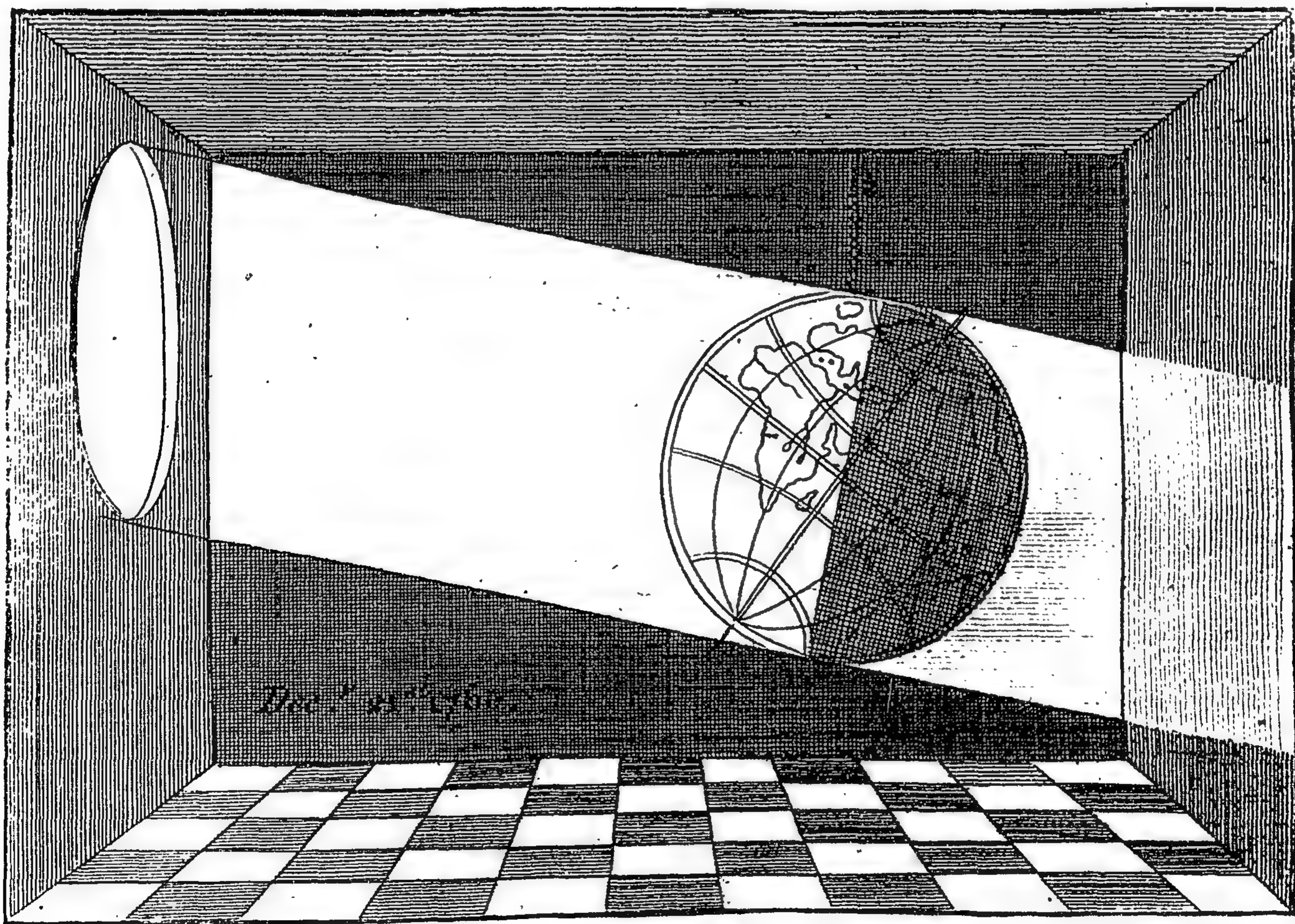
(3d.) If a *Bird* should fly round the Earth in 2 Days, she must go at the Rate of 525 (measured) Miles an Hour.

E X P E R I M E N T S

UPON THE

GLOBE in a DARKENED ROOM.

TAKE the Globe out of its *Horizon*, and tie a strong Thread to the Brass-Meridian at the Latitude of the Place you are in: By this Thread hang it to the Room where the Sun may shine through a Hole in the Window-shutter freely upon it. Then directing the Poles of the Globe to their respective Poles in the Heavens; stay it fast with another Thread, that it cannot go from that Position. This being done, bring the Place you are in to the Edge of the Meridian; so will the Globe be *rectified*,—and will correspond in all Respects with the *Earth* itself, and *that Part* of it you *live upon*.



The *Globe* being thus *suspended* in a Room, made *dark* every where but at the Hole through which the *Sun Beams* enter, (as exhibited in the above Figure) you may pleasantly behold the following curious *Phænomena*, or Appearances; which will give you a clearer Idea of many Conclusions in *Geography* than any Descriptions whatever.

PHÆNOMENON I. You will see how this *artificial* Earth, like the *natural*, will have *one* Hemisphere illuminated by the *Sun*, and the *other* involved in *Shade*.—You will see, at that Moment, where it is *Day*, and where it is *Night*.—'Tis *Day* in all the Countries within the *Sunshine*, and *Night* in the Nations *behind*, they being hid in *Obscurity* and *Shade*.

PHÆNOMENON II. If, in the *Middle* of the *enlightened Hemisphere*, you set up a *Pin* *perpendicularly*, it will project *no Shadow*, which shews that the *Sun* is just in the *Zenith* of that Place; (that is) *directly over the Heads of the Inhabitants there*.—And, if many *Pins* be stuck up in different Parts of the *Globe*, they will cast their *Shadows* exactly the same Way as the *Inhabitants* of those Places do. Some you will see pointing towards the *North*, some to the *South*; some stretching *Eastward*, others *Westward*; and some again projecting *no Shadow* at all.

PHÆNOMENON III. If you draw a *Meridian Line*, with a *Pencil*, from one Pole to the other, through the *Middle* of the *illuminated Hemisphere*;—then in all Places under that Line it is *Noon*; in those Places situate on the *West Side*, it is *Morning*, for with them the *Sun* is seen ascending in the *East*; and in those Places situate on the *East Side*, it is *Evening*, for with them, the *Sun* is seen descending to the *West*.

PHÆNOMENON IV. The *Globe* still remaining in the *same Position*, you may see on the *East Side* in what Nations the *Sun* is stealing away, and drawing the dusky *Curtain* of *Night* after it; and on the *Western Side* of the *Globe*, you may observe, the *Sun* creeping upon it, driving the *Darkness* before him, and blessing the *benighted Inhabitants* with the *Glories* of the coming *Day*.

PHÆNOMENON V. So many *Degrees* as the *Light* spreads beyond either the *North* or *South Pole*, just so many *Degrees* is the *Declination* of the *Sun* either *Northward* or *Southward* at that Time: And in all those Places comprehended in a Circle described at the Termination of the *Sunshine* about the Pole, it is *continual Day* till the *Sun* *decreases* in its *Declination*; for the *Sun* goes not below their *Horizon*, as as you may easily perceive, by turning the *Globe* gently upon its *Axis*: And at the *opposite Pole*, to the same Distance round it, it will continue to be *Night* (the *Sun* not reaching thither) till it *decreases* in its *Declination*; for in this Situation it cannot ascend above, or be seen in their *Horizon*.

PHÆNOMENON VI. The *Globe* remaining in the *same Situation* till the *Evening*; you may, if the *Moon* shines, see what Nations are *illuminated* by the *Moon* at that Time, and where she is *rising* and *setting*:—You will also see the various Projections of the *Shadows* of the several *Inhabitants* over the *Globe*, and to which of the *Poles* she does not *set* that Night.

PHÆNOMENON VII. If you take a *narrow Strip of Paper* equal in Length to the *Circumference* of the *Globe*, and divide it into 24 equal Parts, to represent the 24 Hours of the *Day and Night*, marking it in Order from 1, 2, 3, to 12; and then beginning again 1, 2, 3, to 12, as before; you may, by *girting* the *Globe* round upon the *Equinoctial*, (provided you take care to place one of the 6's exactly under the *Meridian* of your *Habitation*) have a continual *Sun-Dial*, which will always point out the *Hour* of the *Day* at two different Parts, viz. where the *illuminated Hemisphere* is divided from the *shaded*, both on the *Eastern and Western Sides* of the *Globe*.

GEOGRAPHICAL PARADOXES.

Before we *conclude* this Subject on the *Globe*, it will not, I flatter myself, be disagreeable to entertain the Reader with a few *peculiar Properties* relative to it; and which, though at *first*, may seem to carry an Air of *Falshood* or *Absurdity* with them to those, who have not been accustomed to Enquiries of this Sort, yet, upon a *more deliberate Consideration*, will be found to be *real Truths*, and such as actually exist in Fact. *Propositions* of this Kind are generally called PARADOXES; their *Design* is to awake the Appetite of the *young Learner*, rouse his *Attention*, and set him upon *thinking*.

PARADOX I. There is a *certain Place* upon the *Earth*, where the *Winds*, though frequently *veering round the Compass*, always *blow* from the *North*.

SOLUTION.—This must be at the *South Pole*, where there is no such Thing as *East* and *West*; all *Winds* blowing there must necessarily blow from the *North*, as all *Winds* at the *North Pole* must needs blow from the *South*; because the *Meridians* which are *North and South Lines*, all unite in the *Poles* themselves.

PARADOX II. There are *two remarkable Places* on the *Globe*, in which there is but *one Day* and *one Night* through the whole *Year*.

SOLUTION.—The *two remarkable Places* are the *two Poles*: For to the *North Pole* the *Sun* rises about the 20th of *March*, and sets not till the 23d of *September*, at which Time it rises to the *South Pole*, and continues to shine there till the 20th of *March* following. And because it *rises* but *once*, and *sets* but *once* in a *Year* to either, there can be but *one Day* and *one Night* in the *whole Year*.

PARADOX III. There are *three remarkable Places* on the *Globe*, to whose *Inhabitants* all the *Stars* in *Heaven* are *visible* on three certain *Nights* of the *Year*.

SOLUTION.—This is upon the *Equator*: When at the Beginning of the *Night*, you see one *Hemisphere*, or *half* the *Stars*, which by the *Morning* set, and the *other Half* appear in their Room, which were hid the *Evening* before. Thus there are not only *three Places*, but *all Places* upon, or near, the *Line*, are favoured with *this Appearance*, which we here can *never enjoy*.

PARADOX IV. There is a certain Island in the *Mediterranean* Sea, on which, if *two Children* were born at the *same Instant*, and should live several Years, and both *expire* on the *same Day*, the *Life* of the *one* would exceed the *Life* of the *other* several Months.

SOLUTION.—If *one* of the Persons sail *East*, the *other West*, round the *Globe*, which is now easily done in a Year, they will *differ two Days* in their Reckoning, the *one* having got a Day, the *other lost* one; so that in 40 Years the *one* will seem to be 80 Days older in his Reckoning than the *other*, when in fact the *Life* of *one* is not an Hour more than the *other*.—Others solve this Paradox, by supposing one of the Persons to go and reside within one of the *Polar Circles* (as at Latitude 73 Degrees) where the Day is 3 Months long; and then return back to the *other*, who lives in a Part of the World, where the Day never exceeds 24 Hours; in this Case, though *both die* at the *same Instant*, the *one* will be *three Months* older than the *other*.

PARADOX V. There are *two Places* in *Asia* that lie under the *same Meridian*, and at a *small Distance* from each other, and yet the respective Inhabitants, in reckoning their Time, *differ an entire Day* every Week.

SOLUTION.—This seems to be the Case of the *Portuguese* and *Spaniards* in the *East Indies*. The *Spaniards* sailing thither *Westerly*, *lost half a Day*; the *Portuguese* sailing *Easterly*, *gained half a Day*; the *one* having a Settlement in *China*, the *other* in the *Philippian Isles*, near the *same Meridian*, it must of course be *Saturday* with the *one* when it is *Sunday* with the *other*.

PARADOX VI. *Three certain Men* went a *Journey*, in which, though their *Heads* travelled *twelve Yards* farther than their *Feet*, yet all returned *alive*, and with their *Heads on*.

SOLUTION.—If any Person should travel round the *Globe*, the Space gone over by his *Head* will exceed that of his *Feet*, by the *Circumference* of a Circle, whose *Semi-Diameter* is the Man's own *Height*.—Now suppose *Drake*, *Cavendish*, or *Anson*, who went round the *Globe*, were each of them near 2 Yards high; then will the *Diameter* of the Circle be 4 Yards, and the *Circumference* something more than 12 Yards; and so much farther did the *Heads* of these Gentlemen go than their *Feet*.

* * * Something like this happens to a *Horse* in a *Mill*. The *off Side* goes *six Times* the *Tickness* of the *Horse* farther than the *Side next* the Center, in each Revolution, yet the *near Side* does not seem to travel *faster*, nor is the *off Side* left behind.

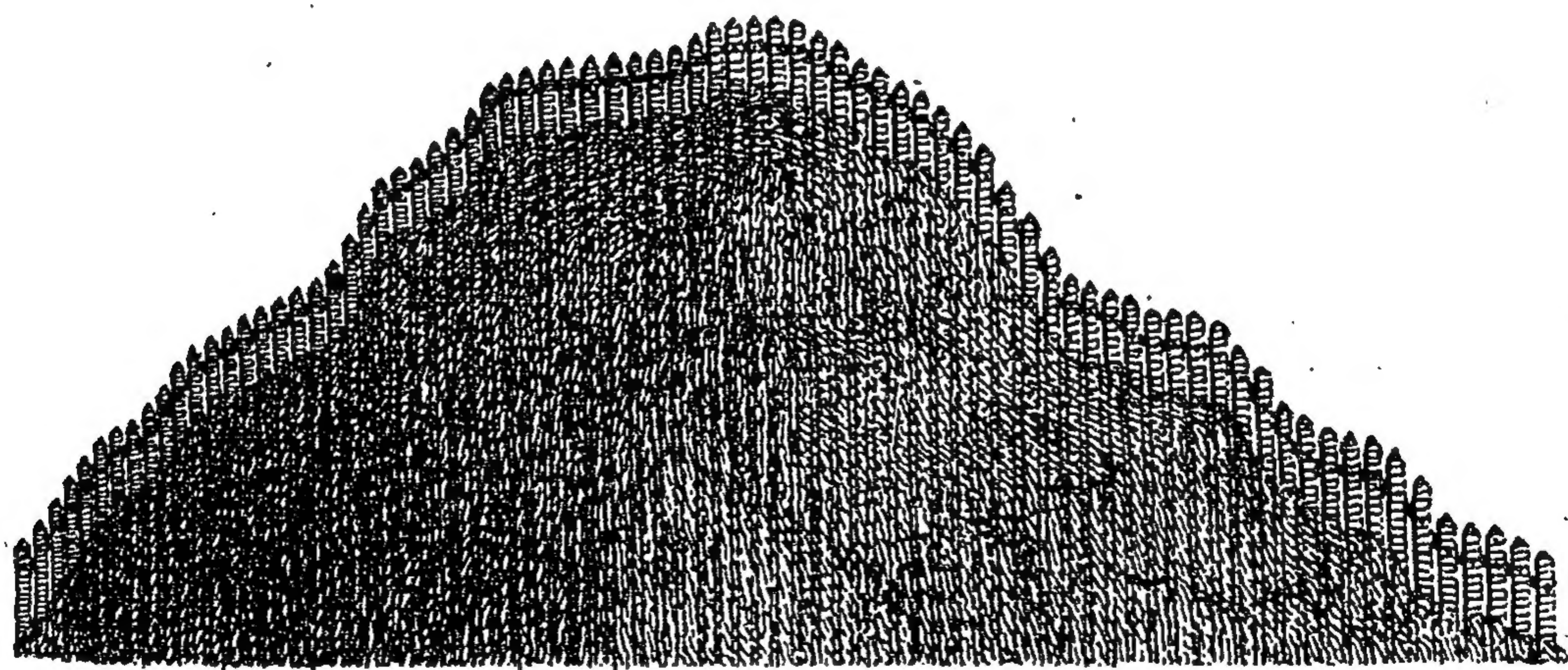
PARADOX VII. There are *two Places*, often visited by the *English*, whose Difference of *Longitude* is 10 Degrees, and Distance 600 Miles: And there are also *two other Places* usually frequented, whose Difference of *Longitude* is the same (i. e. 10 Degrees) yet their *real* Distance from each other is not much more than 60 Miles.

SOLUTION.—At the *Equator* every Degree of *Longitude* is equal to a Degree of *Latitude*, which is 60 Miles; so that two Places, 10 Degrees distant there, are 600 Miles asunder. But in the *Icy Sea* near the North of *Greenland*, where the *Whale Fishery* is carried on, a Degree of *Longitude* is but about 10 Miles (the Meridians approaching much nearer than at the Equator) consequently two Places, which are 10 Degrees distant there, will not be more than 100 Miles asunder.

PARADOX VIII. There are *three* distinct Places on the *Earth*, all differing in *Longitude* and *Latitude*, and distant from each other 2000 Miles completely, yet they all bear upon one and the same Point of the *Compass*.

SOLUTION.—All Places, though different in *Longitude* and *Latitude*, and at what Distance soever, with Respect to either *Pole*, bear upon the *same Point* of the *Compass*. For, to an Eye at the *North Pole*, all Places bear to the *South*; and at the *South Pole*, all Places bear to the *North*: Because, all the Points of the *Compass* (like the *Meridians*) unite there.

PARADOX IX. There are several *Mountains* in *England* and *Wales* of a prodigious Height, yet of such Nature and Situation, that were they to be paled across, they would take no more to complete that Boundary than would be found necessary to pale only across the *Base*, if the Mountain was removed.



SOLUTION.—This is *true* of all *Hills* whatever: For, as all *Paling* is set *perpendicular*, there must be just the same Quantity as if it stood upon the *Base*. This is clear from a Sight of the *Figure*, in which you see the *Pales* upon the *Ascent* and *Descent* of the Hill, transferred by Dots to the *Base* or *Ground-Line*, where the *Number* and *Distances* are equal in both Cases.

††† Hence it is manifest, that *no Hill* (though it has a larger Surface than level Ground) will bear more *Trees*, or *Grain*, than the *Surface* would do upon which it stands.

PARADOX X. There are certain Places in *North Latitude*, whose longest *artificial Day* (that is, from *Sun rise* to *Sun set*) is considerably longer, than the longest *artificial Day* to the Inhabitants in the *same Degree of South Latitude*.

SOLUTION.—Those Places are at, or near, the *North Pole*; because the Sun spends about 8 Days more in the *artificial Day* under that *Pole*, where it continually shines from the 20th of *March* to the 23d of *September*, than in the *artificial Day* under the *South Pole*, where it shines from the 23d of *September* to the 20th of *March*, as may easily be tried by counting those Days in an *Almanack*.

Note; All Places in *North Latitude* have their Summer 8 Days longer than the *Southern*. See this explained at Page the 7th.

PARADOX XI. There is a certain *Island* in the *Baltick Sea*, to whose Inhabitants the *Sun* is distinctly visible in the Morning before he rises, and in the Evening after he is set.

SOLUTION.—This is true of all Places as well as of that *Island*; and is caused by the *Refraction* of the *Sun's Rays* entering the *Atmosphere* as he approaches the *Horizon*. The Reason of this is exhibited at Page 3rd. The like happens to the *Moon* and *Stars*: And the thicker the *Air* or *Atmosphere* is, the greater will be the *Refraction*. With us, the *Sun* is raised a whole *Breadth* above the *Horizon* when he is actually below it; and further *North*, and near the *Poles*, much more so.—Note; This made the *Dutch*, who wintered in 1597 at *Nova Zembla* (in the *Frigid Zone*, where the *Sun* is absent some Months in *Winter*) see the *Sun* 16 Days before they expected it, and before they could have seen it, if there had been no such *Refraction*.

PARADOX XII. There is a Place in *Great Britain*, where, when the Tide is in, and the Water high, you may see the *Cattle* feeding in a certain *Island*; but when the Tide is gone out, and the Water low, none can be seen, though they are still feeding in the same Place.

SOLUTION.—The Place may be the Wharf of *Greenwich*, and the *Island* the little Isle of *Dogs* overagainst it. This Appearance is caused by the *Refraction* of the Rays of *Light*, coming from the *Island* at the Time of *High Water*, just as the *Sun* is refracted by the *Air*. (See Page 3.) And seems to be above the *Horizon*, when it is actually below it. In like Manner a *Piece of Silver*, which cannot be seen in a *Basin* at a little Distance, will, if *Water* be poured upon it, immediately become visible.

PARADOX XIII. There is a certain *Village* in the Kingdom of *Naples*, situated in a very low Valley, and yet the *Sun* is nearer to the Inhabitants every Noon by 3000 Miles and upwards, than it is at the Time of its rising or setting.

SOLUTION.—The *Sun* is nearer at Noon to the Inhabitants of any Part of the *Earth*, as well as *Naples*, by the *Earth's Semi-Diameter*, which, by the most accurate Calculation is 4000 measured Miles, and something more.

PARADOX XIV. There is a *certain Place* belonging to our *Earth*, where, if two Persons should chance to meet, they would stand *upright* upon the *Soles* of each others *Feet*, yet still retain their *natural Posture*.

SOLUTION.—The *Place* must be the *Center* of the *Earth* : For, if an *Hole* was made through the *Middle* of it, from *us*, to our *Antipodes*, (see Page 2.) and any one should descend in it from *this Side*, and another, at the same *Time*, descend from the *other Side*, they would both meet at the *Center*, *Feet* to *Feet*, still retaining their *natural Posture*.

PARADOX XV. There is a *Place* belonging to this *Earth*, in which if a *Ladder* be set, and 2 Men ascend it at the same *Time*, it will so happen, that the more they ascend, the further they will be asunder; notwithstanding the one should not go a *Step* higher than the other.

SOLUTION.—This *Place* is the *Center* of the *Earth* : For if the *Middle* of the *Ladder* be placed there, having one *Half* of it on this *Side*, the other *Half* on the opposite *Side*; and 2 Men, at the same *Instant*, begin at the *Center* to ascend it,—one towards *us*, the other towards the *Antipodes*, they they will continually go further and further from each other, though both of them are of equal *Height* upon it; i. e. at an equal *Distance* from the *Center*.

PARADOX XVI. There is a *certain Place* in the *Mogul's Dominions*; where, if a Man possesses only a *Piece* of *Land*, but a few *Yards* square, he can boast, that in a *right Line*, he can pass from *Place* to *Place* 3000 *Miles*, and more.

SOLUTION.—This is *true* of *all Places*, as well as of the *Mogul's Dominions*: for whoever possesses but the smallest *Piece* of *Ground*, possesses not only the *Surface* of it, but is also *Owner* of that which extends quite down to the *Center* of the *Earth*. Hence it is evident, that all *Estates*, or *Lands* are so many *Pyramids*, whose *Points* meet in the *Center* of the *Earth*, and whose *Bases* are the *Land* itself. If, therefore, there were made, or conceived to be made, a *Descent* to the *Bottom* of the *Estate*, or *Middle* of the *Earth*,—the *true Distance* would be 4000 *Miles* or more in a *right Line*; for so much it is from the *Surface* to the *Center* of this *Globe*.

PARADOXES referring to the *Phænomena* of the *Moon*, *Planets*, and *Stars*, as they will appear with more Propriety in a *View* of the *Heavens* and *Use* of the *Cælestial Globe*; we have therefore reserved them for a Conclusion to a Work of that Nature, which is now publishing:—In the mean Time, permit me to conclude in the Language of the most *divine Personage* that ever honoured this Globe with his Presence;—a *Person* to whom we are *all* infinitely indebted; and whose Words should have more Influence in pointing out the *Necessity* of this *Kind of Learning*, and urging our Pursuits in it, than all the *studied Phraseology* of the most *pompous Writers* or *Orators* in the World.

If I have told you EARTHLY Things, and ye believe not, how shall ye believe if I tell you of HEAVENLY Things?

In this View we have only described the *External Parts* of the Earth, the *Internal* will be considered and explained in a future Work.

F I N I S.